# RECREATION, OPEN SPACE AND CONSERVATION ELEMENT

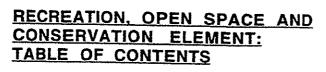


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### RECREATION, OPEN SPACE AND CONSERVATION ELEMENT: LIST OF TABLES AND FIGURES

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## Recreation and Open Space Sub-Element: Analysis of Existing Conditions

The Town of Davie provides numerous recreational and open space opportunities to its residents and visitors. These opportunities are described according to the orientation of types of facilities provided, the facility's service area, and the ownership of the site and the potential for future expansion and improvement of such sites.

Recreational facilities are frequently classified as resource-based or activity based sites. Resource-based facilities are defined as those sites centered around particular natural resources, and may provide opportunities such as picnicking, hiking, water-oriented activities such as fishing and boating, and passive enjoyment of nature. Activity-based facilities are those sites that are developed for particular recreational activities, such as basketball, baseball, football, tennis and paddleball, recreational programs including aerobics and children's after-school activities, municipal pool facilities, and recreational pathways and vita courses. Most park, recreation and open space facilities developed and maintained by the Town contain a combination of activities; however, each facility may be classified according to its primary focus.

Parks and recreational sites are categorized according to the size and area or population served by the site. For purposes of this element, recreational opportunities are identified as neighborhood-,community- or regional-level facilities. Neighborhood-level facilities generally range in acreage up to 10 acres and provide amenities reflective of the localized need of the particular neighborhood served. Such amenities may include children's play areas, paddleball or basketball courts, picnic areas, and small community buildings. Community-level parks are generally larger, consisting of more than 10 acres, and serve more than one neighborhood. These larger facilities may include several ball fields in addition to the children's play areas, paddleball, basketball and tennis courts, and picnic areas found at the smaller parks. Regional-level facilities in the Town are owned and operated by Broward County and generally serve the regional needs of Broward County.

Finally, park and open space sites are described as to ownership of the facility — if the site is owned or leased, the terms of the lease, and the Town's capital investment in the facility. The Town maintains leases with the Broward County School Board and Nova University for recreational amenities located on school campuses. These amenities constitute a joint use of land for the same purpose: recreational enjoyment by Town residents. However, lease arrangements introduce a concern not posed by facilities owned by the Town; that is, possible termination or non-renewal of the lease agreement.

Therefore, the Town must continue to reduce dependency on these facilities to meet the need for required recreational lands, and provide for alternative opportunities to insure compliance with the adopted level of service for park, recreational and open space lands. The Town has already decreased the percentage of leased sites versus owned sites from 46 percent in 1989 to 20 percent in 1995, as illustrated in Table IV-2.

Table IV-1 describes the park and recreational sites owned and maintained by the Town of Davie. Most of these sites consist of 10 acres or less, and are directed to particular neighborhoods (See Figure IV - 1 which shows existing public parks). The Rodeo Arena and the Oak Hill Equestrian Park are among the exceptions to this "rule", as they are community-oriented facilities. The Town acquired almost 55 acres of recreational land since 1989, an increase of approximately 36 percent. This increase included new park sites as well as expansion of some existing facilities.

TABLE IV-1. Existing Park and Recreation Sites
Owned by Town of Davie

<b>Facility</b>	Acreage (+)	<b>Orientation</b>	Service Level
Berman Park	3.00	Activity	Neighborhood
Bergeron	3.21	Activity	Neighborhood
Ivanhoe Park	3.30	Activity	Neighborhood
Lange Park	0.80	Resource	Neighborhood
Driftwood Estates	5.00	Activity	Neighborhood
Eastside Community Hall	0.30	Activity	Neighborhood
Oak Hill Equestrian Park	10.00	Activity	Community
Orange Park	0.50	Activity	Neighborhood
Pine Island Park/Ballfields	113.00	Activity	Community
Potter Park	3.70	Activity	Neighborhood
Rodeo Arena	10.00	Activity	Community
Reflections	4.46	Activity	Neighborhood
Shenandoah Park	17.00	Activity	Neighborhood
SW 36th Court Park	0.20	Activity	Neighborhood
Veterans' Park	15.00	Resource	Community
Waterford Park	5.00	Activity	Neighborhood
Waverly 100	10.10	Activity	Neighborhood
Total Acreage	204.57		

Source: Town of Davie Community Services Department

Table IV-2 lists the park and recreational sites not owned by the Town, but leased from the Broward County School Board and Nova University. Most leases have 40-year terms, with at least one-half of the lease yet to run. Also, it should be noted that while the Flamingo Elementary site is less than the minimum 10 acres



normally associated with community-level parks, the amenities it provides are more community-oriented and it generally serves more than one neighborhood.

TABLE IV-2. Existing Park and Recreation Sites Leased by Town of Davie

<u>Facility</u>	Acreage (+)	Orientation	Service Level
Flamingo Elementary School Davie Elementary School Western High School	5.9 5.9 20.0	Activity Activity Activity	Community Neighborhood Community
Total Acreage	31.8		
Source: Town of Davie Community Services	S Department		·

Table IV-3 lists parks and recreational sites owned by governmental entities other than the Town, but which serve the needs of Town residents. Tree Tops Park is owned and operated by Broward County, and serves as a regional resource-oriented facility. The C-11 Canal Bank is owned by the State, who granted the Town a license for limited recreational use. As Table IV-3 indicates, in 1995 there were almost 550 acres of parks or recreation sites in the Town that are owned by either the State or Broward County, representing an increase of 87 percent from the 293 acres existing in 1989.

TABLE IV-3. Existing Park and Recreation Sites Owned by State or County, in Davie

<b>Facility</b>	Acreage (+)	Orientation	Service Level
Tree Tops Park	257	Resource	Regional
Flamingo Road ESL	155	Resource	Regional
Pine Island Ridge	101	Resource	Regional
C-11 Canal	36	Resource	Community
Total Acreage	549		
Source: Town of Davie Community	<del></del>		•

Table IV-4 describes park and recreational sites that are privately owned yet serve the needs of Town residents and visitors (see Figure IV - 2, Commercial Recreation Sites). This list does not include small recreational facilities owned and maintained by homeowners' and condominium associations, that serve the localized needs of the individual residential developments they serve.

### TABLE IV-4. Existing Park and Recreation Sites Privately Owned

Facility Rolling Hills Country Club Arrowhead Golf Course Camp Seminole Bogeys	Acreage (+) 175 150 120 9	Orientation Active Active Active Active	Service Level Regional Regional Regional Regional
Total Acreage	454		
Source: Town of Davie Community S	ervices and Planning D	Departments.	

Table IV-5 provides information concerning the open space properties in the Town. As the Table indicates, the Town now owns approximately 275 acres of open space for the use and enjoyment of its residents. The Open Space program is still in the implementation stage and, therefore, additional lands will be acquired.

TABLE IV-5. Open Space Properties Owned by the Town of Davie: 1995

<u>Facility</u>	Acreage (+)	Orientation	Service Level
Buckram (part of Westridge) Faulk Ivanhoe FPL Easement	9.0 5.0	Open Space Open Space	Community Community
Robbin Westridge Wolf Lake	160.0 37.0 50.0	Open Space Open Space Open Space Open Space	Community Community Community Community
Total Acreage	275.4		
Source: Town of Davie Community Services I	Department.		

The facilities listed in the five tables above are described in greater detail in the following compendium:

#### Arrowhead Golf Course

8201 Southwest 24 Street

This site contains an 18-hole golf course, clubhouse and two tennis courts. The golf course consists of approximately 150 acres.

#### Berman Park

5801 Southwest 58 Avenue

This park is approximately three acres in size, and includes paddleball courts, playground equipment, picnic areas and a small community center. The rear section of the park is not developed.



#### Camp Seminole

3301 Southwest 142 Avenue

This approximate 120-acre recreational area is owned and operated by the Boy Scouts of America, deed restricted for passive recreational use. Facilities include campgrounds and hiking trails.

#### C-11 Canal Bank

Orange Dr. (btwn Turnpike and Flam.)

The Town maintains gazebos, fishing piers, bicycle and bridle paths, a canoe landing facility, and landscaping along the C-11 canal; classified as a resource park. The canal bank is controlled by the South Florida Water Management District and consists of approximately 36 acres.

#### **Driftwood Estates**

3300 Northwest 77 Avenue

This site is approximately 5 acres in size and is developed with a children's play area, shelter with picnic tables and grills, paddleball courts, softball field, tennis courts and restrooms.

#### **Eastside Community Hall**

4300 SW 55 Avenue

This 0.3 acre facility, owned by the Town, consists of an activity building for community functions and special events, and includes restroom facilities.

#### Flamingo Elementary School

1130 Southwest 130 Avenue

This 5.9 acre facility is leased from the Broward County School Board on an annual basis. The facilities at this site include a basketball court, three playground areas, softball and baseball fields and an outdoor classroom.

#### Flamingo Gardens ESL

3770 Flamingo Road (SW 124 Avenue)

The Flamingo Road Environmentally Sensitive Land Site is a natural treasure recently purchased by Broward County in an effort to preserve its natural attributes. This 155 acre site is a haven for wildlife, a preserve of diverse plant communities, and a refuge for visitors. This ESL's significance derives from its possession of archaeological, historical and ecological resources; including an oak hammock, an 18-acre wetland, and open water lakes.

#### Ivanhoe FPL Easement

6801 SW 148 Avenue

This 14.47-acre site is currently undeveloped.

#### Ivanhoe Park

6101 Southwest 148 Ave.

This 3.3 acre parcel is the site of the Ivanhoe Community Center. The center includes meeting and activity rooms.

#### Ivanhoe Linear Park

Ivanhoe development

This linear park consists of approximately 25 acres of Florida Power and Light transmission easement approximately 200 feet in width. This easement traverses the southern portion of the Ivanhoe development, on both the east and west sides of I-75. It is considered a resource park due to the passive use contemplated.



### IOWN OF DAVIE RECREATIONAL TRAIL MASTER PLAN AND PUBLIC PARKS Broward County Broward Broward County Broward County HOW Dr. (S.W. 24th St.) Pond Apple Slough South Florida **Educational Complex** Tree Tops **LEGEND** NOTES: Trail locations are not precise. This plan reflects Recreational Trail corridors, not precise alignments. **EXISTING EQUESTRIAN TRAIL** PROPOSED EQUESTRIAN TRAIL Under Florida Law an equine activity sponsor or equine professional is not liable for an injury to, or the death of, a participant in equine activities resulting from the inherent risks of equine activities. EXISTING PAVED FIECREATIONAL TRAIL PROPOSED PAVED RECREATIONAL TRAIL FIGURE IV-1

Not To Scale

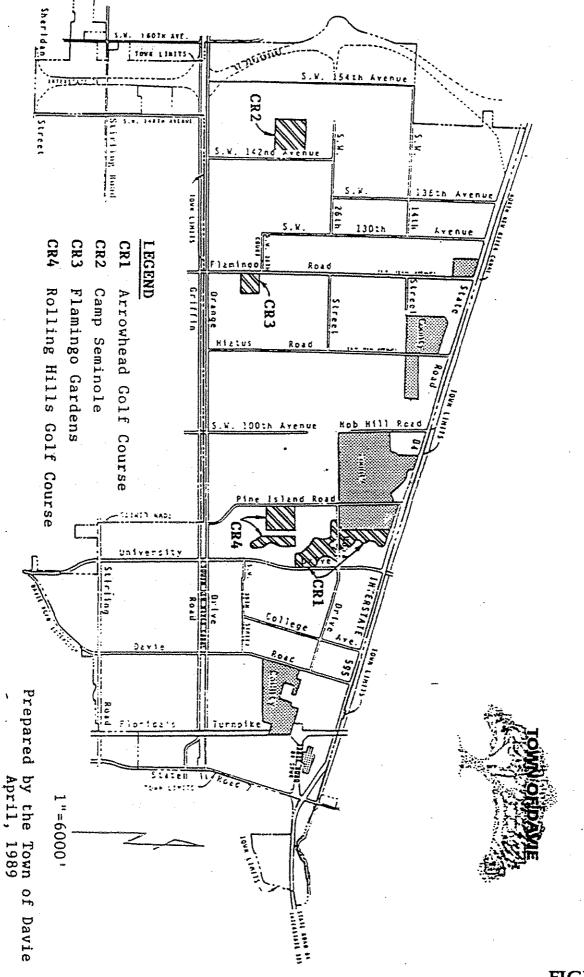


FIGURE IV - !

#### Lange Park

6500 Southwest 47 Street

The .8 acre park facility is resource oriented. The developed portion of the site contains picnic tables, grills, and an open play area.

#### Oak Hill Equestrian Park

3100 Southwest 130 Avenue

This approximate 10-acre facility includes equestrian trails, practice area for horsemen, pavilion with picnic tables and grills, children's play area, multi-activity field area, and restrooms. This active park was developed with a grant from the State of Florida Department of Natural Resources, and opened in June 1983.

#### **Orange Park**

841 Southwest 133 Avenue

This facility is an approximate 1/2-acre neighborhood park located within the Orange Park Mobile Home Subdivision. The site contains a community center building.

#### <u>Pine Island Park</u>

SW 92 Ave. & SW 36 St.

The 38-acre site is an active park, which houses a municipal pool facility, community center building, concessions, restrooms, 2 baseball/softball fields, and 2 football/soccer fields.

#### Pine Island Ridge ESL

This Environmentally Sensitive Land Site was recently purchased by Broward County in an effort to preserve its important natural characteristics. This 101 acre site is used as an area of passive recreation and education, and contains equestrian, nature and pedestrian/bike trails.

#### Potter Park

4250 Southwest 57 Terrace

This site consists of approximately 3.7 acres and includes a children's play area, picnic pavilion, paddleball court, basketball area, lighted softball field, and concession stand. This active park site was developed with Community Development Block Grant funds in 1976.

#### Reflections

4200 Alpine Woods Road

Reflections is a small park area. This 4.46-acre site contains play area equipment for recreational use.

#### **Robbins Lodge**

4005 Hiatus Road

Robbins Lodge is a sprawling 160 acre site, purchased through an Open Space Bond Issue. It contains an activity building, pavillions, picnic areas and restrooms.

#### Rodeo Arena

6550 Southwest 42 Street

The arena is part of the 10-acre recreational facility located behind the Town Hall complex. The facility contains a covered arena and bleachers seating 5,000, chutes, concession stands, office/dressing room building, restrooms, a press booth/announcer stand building, and a seven acre open space area which can be used for parking or temporary carnival/festival facility improvement.

Rolling Hills Country Club 3501 West Rolling Hills Circle The site contains two golf courses, clubhouse and hotel. The western golf course, a regulation 18-hole course, is approximately 125 acres; the eastern executive course is approximately 50 acres in size.

Shenandoah Park 14601 Southwest 14 Street Shenandoah park is a 17-acre dedicated park site programmed for additional development (see Capital Improvements Element). The active park will contain picnic areas, ball fields and basketball courts, tennis courts, community center, jogging trail and playground equipment.

Southwest 36 Court Park 6200 block of SW 36 Court This pocket park consists of a single lot, and contains a children's play area and basketball facility.

39th Street Ballfields 7099 Southwest 39 Street This six acre site is part of Davie Elementary School and contains two lighted baseball/softball fields, and concession/restroom building. Leased to the Town (40year lease).

Tree Tops Park 3900 SW 100 Avenue This site is a 257-acre resource-based regional park, owned and operated by Broward County. This facility includes picnic areas and shelters, volleyball courts, horse shoe rings, equestrian and nature trails, water oriented sports, children's play areas, administrative/meeting room building, nature observation tower and open space areas.

Veterans' Park 5950 SW 39 Street

This approximate 15-acre site offers picnic areas, sitting areas, and lakeside fishing. The park is considered a resource-oriented facility.

Waterford Park 5825 W. Waterford Drive This is a 5-acre active park located within the Ivanhoe development. The facilities at the site include picnic areas, shelters, children's play area, baseball/softball field, basketball courts, paddleball court, and tennis courts.

Waverly 100 6625 Hawkes Bluff Avenue Waverly is a recently acquired park. It's area is just over 10 acres, and is currently undeveloped.

Western High School 1200 Southwest 136 Avenue The 20-acre school site addresses active recreational needs with a softball field, baseball field, handball court, football/soccer area, tennis courts, and outdoor basketball courts. The site is leased to the Town (40-year lease).

#### **Westridge**

#### 2900 SW 100 Avenue

The Westridge site is an undeveloped open space area of 37 acres, plus 9 additional acres of open space known as the Buckram area.

#### Wolf Lake

#### 5400 SW 76 Avenue

Wolf Lake is a 50 acre area which contains a picnic area, horseback trails and is also used for fishing.

The existing level of service provided by the Town is based on the total number of acres of parks and open space, divided by the population in 1000-person increments. For purposes of determining the level of service currently provided by the Town, facilities containing the following characteristics were included in the calculation:

- · site provides neighborhood- or community-level facility
- site is readily accessible to the public
- · site provides resource- or activity-oriented recreational use

A list of lands included in the determination for Level of Service is included in Appendix IV-5. The following represents the methodology used to derive the LOS for recreation and open space:

Total recreation and open space acreage ÷ (Town population ÷ 1000) = Level of Service

Using the above methodology (with Broward County population projections), the 1995 level of service is established:  $(834) \div (54,554 \div 1000) = 15$  acres per 1000 persons.

Based on the Level of Service of 15 acres per 1000 population, the Town shall not be required to provide additional recreation and open space lands during the short or long range planning horizons in order to meet the 10 acres per 1,000 population Level of Service Standard during the planning period, as depicted in Table IV-6.

It has been and shall continue to be the Town's policy to require developers to participate in the provision of adequate recreation and open space facilities to satisfy the needs of the development's projected population at buildout. It should be noted that the population estimates used herein are projected resident population figures, and do not include seasonal residents. The Town's projected seasonal population (please refer to Table IV-6 on the following page) consists of just 6% of the total population, and does not impact the delivery of recreation and open space services to the community.

### TABLE IV-6. Projected Need for Recreation and Open Space Acreage

	<b>Projected</b>	<u>Acreage</u>	<b>Additional</b>
<u>Year</u>	Population*	Requirement**	Acres Needed
1995	54,554	534.0	0
1996	55,755	557.6	0
1997	56,855	569.6	0
1998	57,956	571.6	. 0
1999	58,856	583.6	0
2000	59,346	593.5	. 0
2005	65,036	650.4	0
2010	69,451	694.5	0

<sup>\*</sup>Extrapolation of population estimates provided by Broward County Office of Planning

It has been and shall continue to be the Town's policy to require developers to participate in the provision of adequate recreation and open space facilities to satisfy the needs of the development's projected population at buildout. It should be noted that the population estimates used herein are projected resident population figures, and do not include seasonal residents. The Town's projected seasonal population consists of just 6% of the total population, and does not impact the delivery of recreation and opens pace services to the community.

<sup>\*\*</sup>Reflects Level of Service standard of 10 ac/1000. Source: Town of Davie

# Recreation and Open Space Sub-Element: Needs Analysis

The Community Services Department of the Town is responsible for maintaining Davie's facilities and programming at the facilities. It is the Department's experience that residents prefer to utilize larger or community-level park sites, as they contain more diverse amenities than the neighborhood parks. This is particularly true of residents in the western low-density portion of the Town, where backyards serve the needs normally associated with neighborhood sites. Town residents express the need for active facilities such as additional tennis courts, ball fields and basketball/paddleball courts but, most importantly, a way to access these facilities by bicycle, horseback and on foot. The linkages between parks, recreational facilities and open spaces are referred to as "recreational pathways", and shall consist of multi- and single-purpose paths that shall accommodate cyclists (non-motorized), equestrians, and pedestrians/joggers.

The Town shall continue to develop a "spine" network of recreational pathways, that link activity and attractor centers with community facilities. From the spine network, pathways linking smaller activity generators, such as residential communities, shall continue to be developed. The recreational pathway system will facilitate public access to open spaces and recreational facilities, schools, and commercial developments. The Town will continue its program to acquire, develop and enhance recreational facilities while the recreational pathway network is developed. Davie shall continue to seek public participation, through its advisory boards and committees such as the Open Space Advisory Committee and Bicycle Advisory Committee, in the planning process.



#### Conservation Sub-Element: Analysis of Existing Conditions

The purpose of the Conservation portion of this Element is to identify and preserve natural resources for the use and enjoyment of existing and future populations. Natural resources include rivers, lakes, wetlands and air; floodplains; commercially valuable minerals; soils subject to erosion problems; and native plant and animal communities.

#### Surface Waters, Rivers and Lakes

All surface waters in the Town are classified as Class III waters, by the Florida Department of Environmental Regulation. The priority use of Class III waters is recreation and fish and wildlife propagation. Primary canals are maintained by the South Florida Water Management District and, in Davie, include the North New River Canal and South New River Canal. Numerous smaller canals are maintained by the appropriate drainage district. Additionally, there are many manmade lakes or borrow pits, both active and inactive, throughout the Town; most are associated with particular developments which utilized the material for construction purposes (see Figure IV -3, Lakes and Canals; and, Generalized Natural and Historical Resources Map of the Future Land Use Plan Map Series). There are no natural rivers or lakes in the Town.

Urban runoff remains a primary determinant regarding surface water quality. Onsite retention and detention facilities create opportunities for filtering of pollutants prior to entry into the aquifer. This concern is critical in areas designated as wellfield protection areas, where the potential for contamination of wellfields from toxic materials could be disastrous. Therefore, land uses and activities within the wellfield protection areas are regulated, according to the zone of influence designated for the development site. Additional discussion is provided in the Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element. Wellfield zones of influence are depicted on the Generalized Natural and Historical Resources Map of the Future Land Use Plan Map Series.

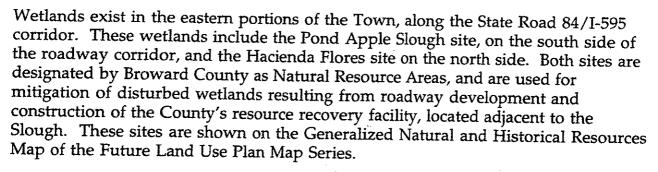
#### Air Quality and Pollution

Air quality and emissions in Broward County, once monitored by the Broward County Environmental Quality Control Board (EQCB) are now monitored by the Florida Department of Environmental Protection (DEP), with which the (EQCB) merged. The primary non-point source of air pollution is the automobile. The DEP regularly monitors air quality throughout the County and publishes a daily rating for air quality (pollution standards index).

Air quality in Broward County has improved since 1989, rating "very good overall" in 1994. There were no violations of the National Ambient Air Quality Standards (NAAQS) for any of the six criteria pollutants monitored by DNRP's Air Quality

Division. The EPA upgraded southeast Florida's air quality designation from "moderate nonattainment" to "attainment" for ozone.

#### Wetlands

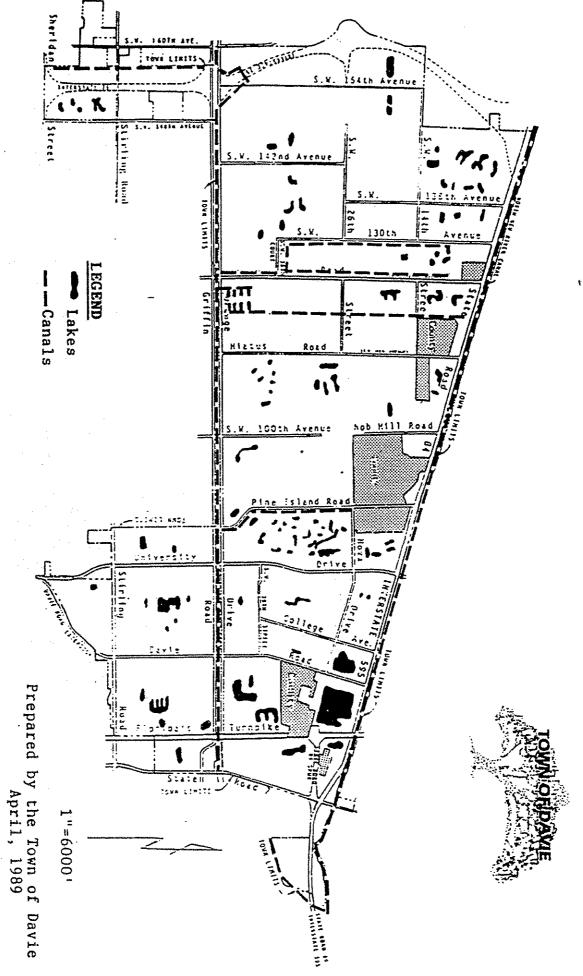


Davie's wetlands are a combination of valuable fresh-water swamp and marsh lands, with plants that are mostly sub-tropical in origin. The wetlands are divided into two major plant communities: swamp and marsh-wet prairie. These terrains are very flat, with an elevation of approximately two feet. The swamp makes up the eastern half of the wetland area, covering all of the shoreline of the South New River Canal within Davie. This eastern swampy half is characterized by dense native vegetation, dominated by Pond Apple, Cypress, Strangler Fig and Willow. The vegetative growth is facilitated by fertile soil which is nourished by many intrusions of minor water passages into the swamp.

Davie's wetlands serve as a natural habitat to fresh water and migrating game fish. The swampy terrain also attracts tropical and subtropical aquatic birds, such as the Heron and Egret genera. The protected Osprey also makes its home in Davie's wetlands. Other species of particular interest which reside in Davie are: burrowing owls, Brazilian free-tailed bats, least terns, indigo snakes, and gopher tortoises.

The western wetlands are less swampy than the east. The terrain is open. Cypress and Melaleuca trees dominate this area. Sawgrass and other marsh/prairie grasses and broad leaved annuals constitute the ground cover. The vegetation in this area is much more sparse than the east because the drier soil there is less fertile, and because there is periodic burning. Animals such as red-winged and marsh hawks, raccoons, opossums, foxes, armadillos and a variety of aquatically oriented snakes and turtles make their home in Davie's marsh-wet prarie in our western wetlands.





The Town is primarily located in flood zone A, as designated by the Federal Emergency Management Agency (FEMA) and shown on FEMA's flood zone maps. This designation indicates that the area is expected to flood during a 100-year storm event. The ridgelands, described below, are designated as flood zone C, not prone to flooding. See the Generalized Natural and Historical Resources Map of the Future Land Use Plan Map Series for non-flood prone areas; the remainder of the Town is considered to be flood prone. The South Florida Water Management District maintains and implements design criteria for roadway construction and building construction that address potential flooding.

#### Soil and Minerals

There are generally three types of minerals found in the Town: peat, sand shell and marl, and limestone (see Figure IV- 4 , General Minerals Map). Limestone and sand are commercially mined, and provide fill necessary for development and roadway construction. Inactive borrow or rock pits are evident throughout the Town, associated with existing developments and commercial mining in close proximity to interstates and the turnpike (see Future Land Use Plan Map Series, Generalized Natural and Historical Resources Map).

According to the Soil Survey of Broward County, Eastern Part (USDA, 1984), the predominant soil types in the Town are the Halandale-Margate, Lauderhill-Dania, and Immokalee-Urban land-Pompano associations (see Figure IV-5 , General Soils Map). This association is described as poorly drained, nearly level, sandy soils that are less than 60 inches deep to hard limestone. This soil association limits development to the extent that special design, significant increases in construction cost, and extra maintenance are required. Essentially, this type soil is generally removed and/or reconditioned, and replaced with clean fill. While this method of mitigating the adverse soil properties is costly, it enhances the water management system in two ways: firstly, it creates a well-drained development area, thus protecting life and property; and secondly, the rock or borrow pits utilized to create the clean fill necessary to condition the site present a drainage or retention opportunity. Compliance with applicable regulations regarding the dredging, filling, and other land development activities necessary for site preparation is monitored and verified through the issuance of site development permits. Inland soil erosion is minimal, except for siltation at construction sites, according to the Soil Conservation Service of the U.S. Department of Agriculture.

#### Natural Ridges

Broward County has review authority over an environmentally significant site if it has been designated as Local Area of Particular Concern (LAPC), Unique Natural Area, or if the site is included in the Urban Wilderness Inventory. The County must prepare an environmental impact report (EIR) on the site before it may be developed. The EIR provides the Broward County Board of County Commissioners information necessary for the Board to decide if all or a portion of the site should be acquired and preserved. Alternatively, a development permit may be granted with conditions that mitigate adverse impacts on the natural resources. The County has designated several sites within the Town as Local Areas of Particular Concern.

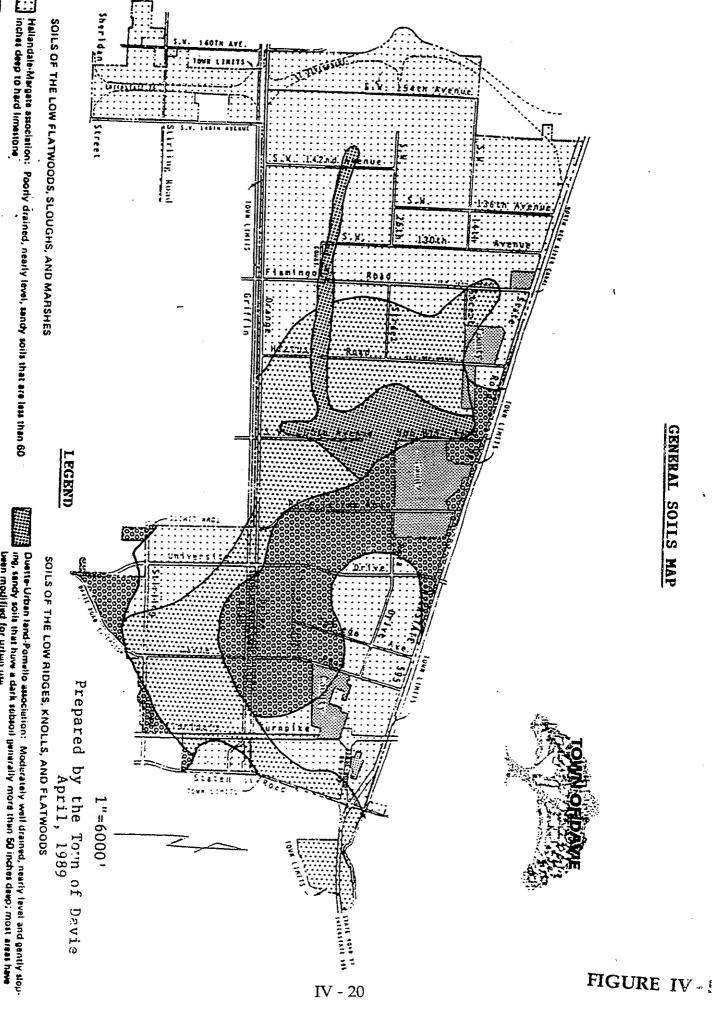


These include the Kapok Tree Oak Hammock, identified as LAPC 76; Long Key Ridge tropical hardwood hammock, LAPC 77; and Pine Island Ridge, LAPC 79. (See Figure IV - 6, Natural Reservations Map). On March 14, 1989, voters in Broward approved the passage of a 75 million dollar bond issue which, in part, went towards the purchase of two Environmentally Sensitive Land Sites in Davie: the Pine Island Ridge and Flamingo Road Sites.

The portion of Pine Island Ridge within the Town is actually an approximate 120-acre complex of sandy ridges with a maximum elevation of 29 feet, M.S.L., one of the highest points in Broward County. Historically, the ridgelands were dry islands surrounded by wet prairie. Artifacts at the Ridge have been uncovered by archaeolgists which indicate that the site was used as far back as 2,000 years ago by nomadic peoples who raised crops in the area. The Seminole Indians hold the area to be sacred, as it had been used by their people for hundreds of years as a refuge for agriculture as well as a place for religious ceremonies. Pine Island Ridge represents an outstanding example of a hardwood hammock. Dominant tree species include live oak, slash pine, laurel oak, sabal palm, and gumbo limbo. A portion of the ridge is located within a County owned/operated park, Tree Tops Park. Broward County purchased 101 acres for preservation, linking the site with Tree Tops Park.

The Long Key Ridge, a portion of which is also referred to as the Kapok Tree Oak Hammock, stretches from east of Flamingo Road to SW 136 Avenue in Sections 23 through 26, Township 50S, Range 40E. Field studies indicate that portions of this hammock were scraped, perhaps for agricultural use, many years ago. However, the large live oaks and red bays that dominate the site were left intact. The understory has since been left to revert. This ridge area served as camps to the ancient Tequesta Indians, and more recently as a Seminole settlement. Broward County purchased 150 acres of the Long Key Ridge, now known as the Flamingo Road Environmentally Sensitive Lands Site.

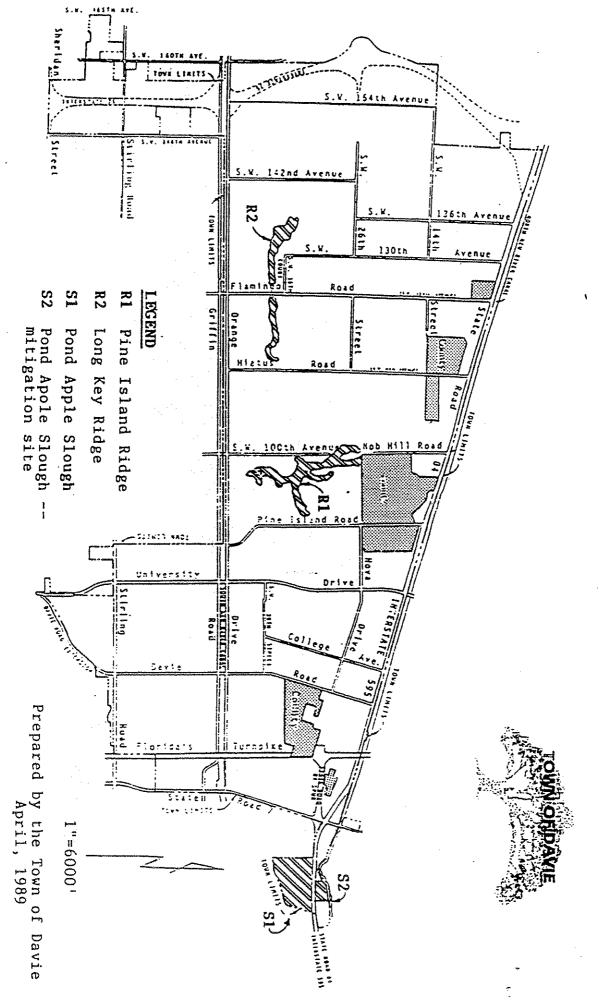
Davie currently implements a Tree Preservation Ordinance which requires the relocation or replacement of trees removed as a result of development. The Town's Ordinance is consistent with the Broward County Tree Preservation Ordinance. The Town shall review the South Florida Water Management District's Model Landscape Code which addresses methods of encouraging and preserving habitats and native vegetation. The use of native vegetation that is not water consumptive (xeriscape) is a viable means to reducing potable water consumption while providing a native community that enhances our environment.



Immokalee-Urban land-Pompano association: Poorly drained, nearly level, sorty soils that late more than 80 inclies deep; must have a durk, organic coated subsoil; reas have linen modified his urban use

ing, sandy solls that have a dark subsoil generally more than 50 inches deep; most areas have been modified for urban use

Lauderhill-Dania association: Very poorly drained, nearly level, organic soils that are less than 40 inches deen to hard limestone



### Recreation, Open Space and Conservation Element: Goals, Objectives and Policies

GOAL 1: To provide sufficient parks, recreational lands and open spaces to satisfy the needs and diverse desires of the existing and future populations.

OBJECTIVE 1.1: The Town shall provide an adequate amount of recreational and open space lands, resource and activity oriented, to serve the needs of the existing and projected population.

- Policy 1.1-1: The Level of Service standard for recreation and open space lands as herein adopted is ten (10) ) acres per 1000 population, with recreation lands comprising a minimum of three acres per 1000 population. The level of service standard shall be used to determine service adequacy at the earliest of the following processes: plat approval for properties requiring platting; or, during site plan approval for properties not requiring (re)platting pursuant to the Platting Requirements of the Implementation Section of the Future Land Use Plan, or properties platted prior to March 20, 1979; or, during building permit review.
- Policy 1.1-2: Land development regulations shall require the dedication of land by developers to satisfy the level of service standard for the projected population. Alternatively, the developer may pay the land value in lieu of dedication, at the discretion of the Town and where adequate land of a suitable nature is not available within the development.
- Policy 1.1-3: The Town shall pursue the acquisition and development of park sites to satisfy the level of service standard, in accordance with the Capital Improvements Element.
- Policy 1.1-4: The Town should pursue joint efforts with other jurisdictions in the acquisition, development and maintenance of pathways as a means for reducing costs and pooling resources.
- **Policy 1.1-5:** During the acquisition of recreation and open spaces, priority shall be given to lands containing natural resources suitable for preservation and appropriate for a resource-oriented facility.

- Policy 1.1-6: The Community Services Department shall continue to involve the public in determining the facility needs at neighborhood-level park sites.
- Policy 1.1-7: Community-level park and recreational facilities shall be located so that it is accessible to the general public, and is not internalized within a particular neighborhood.
- OBJECTIVE 1.2: Parks and recreational facilities shall be developed so as to be accessible to the public.
  - Policy 1.2-1: All parks and recreational facilities shall be developed so as to maximize accessibility, to the greatest extent possible, for all segments of the population.
  - Policy 1.2-2: Automobile and bicycle parking facilities should be provided, to accommodate the needs of the particular facility. Where appropriate, the Town should provide hitching posts and watering troughs for horses.
- OBJECTIVE 1.3: Parks, recreational facilities and open spaces shall be developed with amenities consistent with the orientation of the site, to maximize the enjoyment of the facilities.
  - **Policy 1.3-1:** Activity-oriented sites shall contain a wide variety of recreational opportunities, with multipurpose fields and courts that can accommodate different sports activities.
  - Policy 1.3-2: Park sites should be located adjacent to school sites, when possible, to maximize the potential for joint use of facilities.
  - Policy 1.3-3: Resource-oriented sites shall be developed in a fashion that is compatible with the resource, maintains the integrity of the native vegetation and wildlife, and encourages enjoyment of a passive nature.
- GOAL 2: To provide a network of recreational pathways that provide linkages between parks, recreational facilities, open spaces, and other community facilities throughout the Town.
- OBJECTIVE 2.1: The Town shall continue to maintain and update the plan for the primary network of recreational pathways, which accommodates bicycle, equestrian, pedestrian and other recreational uses.
  - Policy 2.1-1: The Town shall create a series of typical cross-sections for development of paths for bicycle, equestrian and pedestrian use. Standards established by recognized authorities and agencies shall be explored in the development of the cross-sections.

- Policy 2.1-2: Land development regulations shall provide for the accommodation of recreational pathways during plat and site plan review of proposed developments. Developers shall be required to incorporate pathways in their planning efforts, and develop the pathways in accordance with the standards established by the Town.
- Policy 2.1-3: For pathways developed along existing and planned roadways, the development of recreational pathways shall reflect adequate separations from vehicular travel lanes.
- Policy 2.1-4: The Town shall explore the possibility of obtaining grants, gifts, contributions, funding assistance, and other financial resources for the development of recreational pathways.
- Policy 2.1-5: The Town should pursue joint efforts with other jurisdictions in the acquisition, development and maintenance of pathways as a means for reducing costs and pooling resources.
- Policy 2.1-6: The Town shall support the Broward Urban River Trails (BURT) program as an endeavor that is a means of improving the quality of Broward County for boaters, tourist and residents.
- OBJECTIVE 2.2: The recreational pathway system shall link park sites, recreational and community facilities, schools and regional parks and shall utilize open space areas of natural vegetation and unique features in the development of the pathway corridor.
  - **Policy 2.2-1:** Development of the recreational pathway corridors shall maximize existing native vegetation and features.
  - Policy 2.2-2: Planning for recreational pathways shall include amenities that need to be provided at destination points and at interim locations.
  - Policy 2.2-3: The types of pathways provided within each of the linkages shall reflect the departure and destination locations, and the recreational orientation of the linkage.
- GOAL 3: To preserve and protect the natural resources of the Town for the use and enjoyment of the existing and future residents.
- OBJECTIVE 3.1: The Town shall promote the conservation of wildlife habitats, native vegetative communities, and marine habitat.
  - Policy 3.1-1: The Town shall identify wildlife habitats and native vegetative IV 24

communities for acquisition and/or preservation under the auspices of the Open Space Program.

- Policy 3.1-2: Sites designated as Natural Resource Areas (NRA), Local Areas of Particular Concern (LAPC), Urban Wilderness Areas (UWA), or other appropriate designation by Broward County shall be managed in accordance with the applicable County regulations.
- Policy 3.1-3: The Town shall maintain its Tree Preservation Ordinance to insure the protection of native trees and vegetation.
- OBJECTIVE 3.2: The Town shall protect the functions of existing soils, floodplains, wetlands and lakes.
  - Policy 3.2-1: Development shall be in accord with applicable Federal Emergency Management Agency (FEMA) regulations regarding floodplain management.
  - Policy 3.2-2: The development of man-made lakes shall be pursuant to a reclamation plan approved by the South Florida Water Management District (SFWMD) and which provides for revegetated slopes and littoral zones, to enhance water quality and promote fish and wildlife.
  - Policy 3.2-3: Development of open spaces and recreational pathways in open spaces should include methods of educating the public as to the proper handling of native vegetation and wildlife.
  - Policy 3.2-4: Development shall be consistent with the South Florida Regional Planning Council's policy of no-net loss in wetlands. Revegetated wetlands, required as a condition for development, shall be accommodated and sited at locations that provide the most productive environment and may include off-site locations.
  - Policy 3.2-5: Coordinate with appropriate regulatory agencies in the disposal of hazardous wastes, to preserve and maintain the integrity of the natural environment.
  - **Policy 3.2-6:** The Town adopts by reference the water quality standards for stormwater effluent contained in Article V, Chapter 27 of the Broward County Code.
  - Policy 3.2-7: The Town's land development regulations shall require that all invasive exotic plant species be removed as a condition of development approval.

#### OBJECTIVE 3.3: The Town shall encourage a reduction in water consumption.

- Policy 3.3-1: The Town shall review and, as appropriate, amend the regulations addresses landscaping, to encourage and promote the use of non water-intensive native vegetation (xeriscape).
- Policy 3.3-2: The Town shall promote public education and awareness concerning water conservation methods and shall implement water conservation measures in accord with the requirements of the South Florida Water Management District or other appropriate regulatory agency.

#### **OBJECTIVE 3.4:** The Town shall promote the improvement of air quality.

- Policy 3.4-1: The Town shall promote effective roadway design that facilitates vehicular movement in an efficient and safe manner, so as to reduce the impacts of this non-point source of air pollution.
- Policy 3.4-2: The Town shall pursue roadscaping and tree plantings alongside roadways, to provide a visual amenity and filter air pollution created by automobile and truck traffic.

# Recreation, Open Space and Conservation Element: Plan Implementation



All departments in the Town participating in the implementation of this Element shall be required to operate within the framework established by the Goals, Objectives and Policies. All decision-making with regard to capital improvements and expenditures, shall reflect the Goals, Objectives and Policies. Annual budget review and capital improvement programming shall reflect consideration of needs that have been determined with respect to the Goals, Objectives and Policies.

Town land development regulations shall be amended, as necessary, to implement the requirements of this Element.

# Recreation, Open Space and Conservation Element: Monitoring and Evaluation

The quantifiable measures established in the Objectives shall be monitored on a regular basis, with the Community Services Department providing counts on park attendance and participation. The measurement of adequacy cited in Objective 1.1 is compliance with the acreage requirement. Accessibility to the public, per Objective 1.2, and development in accord with the natural features, per Objective 1.3, shall be a function of facility design and attendance.

The measurement for Objectives 2.1 and 2.2 shall be the creation of the pathway network, and its interrelationship with existing attractors.

The performance measure for Objectives 3.1 and 3.2 shall be a function of ongoing monitoring efforts that ascertain the location, and insure the maintenance and enhancement of existing facilities and habitats.

The performance measure for Objective 3.3 is water consumption as monitored by the Town's Utilities Department.

The performance measure for Objective 3.4 is air quality, as monitored and reported by Broward County's Environmental Quality Control Board.

# Recreation, Open Space and Conservation Element: Glossary



- Aquifer: a stratum or formation of permeable material that will yield groundwater in useful quantities.
- Aquifer recharge: the addition of water to the groundwater system by natural or artificial processes.
- Agricultural Uses: activities within land areas which are predominantly used for the cultivation of crops and livestock including: cropland; pastureland; orchards; vineyards; nurseries; ornamental horticulture areas; groves; confined feeding operations; specialty farms; and silviculture areas. Agricultural uses are further defined in the Agricultural land use category, as described in the Permitted Uses portion of the Plan Implementation Section.
- Concurrency: public facilities and services needed to suppport development shall be available at the same time or conicidental with the impacts of such development.
- Concurrency Management System: the provisions in the local government comprehensive plan including implementation regulations, encompassing the restrictions, methods, resources, timing and solutions intended to be compatible with and further compliance with the statutory requirement to provide public facilities and services needed to support development concurrent with the impacts of such development.
- Cone of Influence (Zone of Influence): an area around one or more major waterwells, the boundary of which is determined by the government agency having specific statutory authority to make such a determination based on groundwater travel or drawdown depth.
- Conservation Uses: activities within land areas designated for the purpose of conserving or protecting natural resources or environmental quality and includes areas designated for such purposes as flood control, protection of quality or quantity of groundwater or surface water, floodplain management, fisheries management, or protection of vegetative communities or wildlife habitats. Conservation Uses are further defined in the Conservation land use category, as described in the Permitted Uses portion of the Plan Implementation Section.
- Developer: any person, including a governmental agency, undertaking any development.



- Drainage Facilities: a system of man-made structures designed to collect, convey, hold divert or discharge stormwater, and includes stormwater sewers, canals, detention structures, and retention structures.
- Ecosystem: the living and non-living components of the environment which
  interact or function together, including plant and animal organisms, the physical
  environment, and the energy systems in which they exist; all components of the
  ecosystem are interrelated.
- Education Uses: activities and facilities of public or private primary or secondary schools, vocational and technical schools, and colleges and universities licensed by the Florida Department of Education, including the areas of buildings, campus open space, dormitories, recreational facilities or parking.
- Environmentally Sensitive Land: those areas containing Natural Resources, as depicted in the Future Land Use Plan Map Series.
- Facility Availability: means whether or not a facility is available in a manner to satisfy the concurrency management system,
- Flood Plains: areas inundated during an identified flood event or identified by the National Flood Insurance Program as an A Zone or V Zone on Flood Insurance Rate Maps or Flood Hazard Boundary Maps.
- Groundwater: subsurface water in the zone of saturation.
- Hazardous substance: a substance that has one or more of the following characteristics: ignitable, corrosive, reactive, toxic.
- Historic Resources: all areas, districts or sites containing properties listed on the Florida Master Site File, the National Register of Historic Places, or designated by a local government as historically, architecturally, or archaeologically significant.
- Infrastructure: those man-made structures which serve the common needs of the population, such as: sewage disposal systems; potable water systems; potable water wells serving a system; solid waste disposal sites or retention areas; stormwater systems; utilities; piers; docks; wharves; breakwaters; bulkheads; seawalls; bulwarks; revetments; causeways; marinas; navigation channels; bridges; and roadways.
- Land Development Regulations: ordinances enacted by governing bodies for the regulation of any aspect of development and includes any local government zoning, rezoning, subdivision, building construction, or sign regulations or any other regulations controlling the development of land.

- Local Area of Particular Concern: an area designated on the Natural Resource
  Map Series of the Broward County Land Use Plan which has been declared to be
  environmentally sensitive. Those areas are subject to environmental impact
  report provisions of the Broward County Land Development Code. The criteria
  for Local Areas of Particular Concern are contained in the Plan Implementation
  Requirements section of the Broward County Land Use Plan.
- ( )
- Level of Service: an indicator of the extent or degree of service provided by, or
  proposed to be provided by a facility based on and related to the operational
  characteristics of the facility. Level of service shall indicate the capacity per unit
  of demand for each public facility.
- Natural Reservations: areas designated for conservation purposes, and operated
  by contractual agreement with or managed by a federal, state, regional or local
  government or non-profit agency such as: national parks, state parks, lands
  purchased under the Save Our Coast, Conservation and Recreation Lands or
  Save Our Rivers programs, sanctuaries, preserves, monuments, archaeological
  sites, historic sites, wildlife management areas, national seashores, and
  Outstanding Florida Waters.
- Nonpoint Source Pollution: any source of water pollution that is not a point source.
- Open Spaces: undeveloped lands suitable for passive recreation or conservation uses.
- Point Source Pollution: any source of water pollution that constitutes a
  discernible, confined, and discrete conveyance, including but not limited to any
  pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling
  stock, concentrated animal feeding operation, or vessel or other floating craft,
  from which pollutants are or may be discharged. This term does not include
  return flows from irrigated agriculture.
- Pollution: the presence in the outdoor atmosphere, ground or water of any substances, contaminants, noise, or manmade or man-induced alteration of the chemical, physical, biological, or radiological integrity of air or water, in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property, or unreasonably interfere with the enjoyment of life or property.
- Potable Water Facilities: a system of structures designed to collect, treat, or distribute potable water, and includes water wells, treatment plants, reservoirs, and distribution mains.
- Private Recreational Sites: sites owned by private, commercial or non-profit
  entities available to the public for purposes of recreational use.

- Public Recreational Sites: sites owned or leased on a long-term basis by a federal, state regional or local government agency for purposes of recreational use.
- Public Access: the ability of the public to physically reach, enter, or use recreation sites including beaches and shores.
- Public Buildings and Grounds: structures or lands that are owned, leased, or
  operated by a government entity, such as civic and community centers, hospitals,
  libraries, police stations, fire stations, and government administration buildings.
- Public Facilities: transportation systems or facilities, sewer systems or facilities, solid waste systems or facilities, drainage systems or facilities, potable water systems or facilities, education systems or facilities, parks and recreation systems or facilities and public health systems or facilities.
- Recreation: the pursuit of leisure time activities occurring in an indoor or outdoor setting.
- Recreation Facility: a component of a recreation site used by the public such as a trail, court, athletic field or swimming pool.
- Recreation Uses: activities within areas where recreation occurs.
- Recreational Pathway: any road, path or way which is open to equestrian travel, bicycle travel, traffic afoot and other recreational purposes and from which motor vehicles are excluded.
- Resident Population: inhabitants counted in the same manner utilized by the United States Bureau of the Census, in the category of total population. Resident population does not include seasonal population.
- Seasonal Population: part-time inhabitants who utilize, or may be expected to
  utilize, public facilities or services, but are not residents. Seasonal population
  shall include tourists, migrant farmworkers, and other short-term and long-term
  visitors.
- Toxic Substance: a chemical or mixture that presents an unreasonable risk of injury to health or the environment.
- Water-Dependent Uses: activities which can be carried out only on, in or adjacent to water areas because the use requires access to the water body for: waterborne transportation including ports or marinas; recreation; electrical generating facilities; or water supply.
- Water-Related Uses: activities which are not directly dependent upon access to a
  water body, but which provide goods and services that are directly associated
  with water-dependent or waterway uses.

- Water Wells: wells excavated, drilled, dug, or driven for the supply of industrial, agricultural or potable water for general public consumption.
- Wetlands: an area that is inundated by water with sufficient frequency to support, and normally does support, an assemblage of organisms that is adapted to saturated or seasonally saturated soil conditions for growth and reproduction including, but not necessarily limited to, swamps, marshes, bogs, sloughs, potholes, wet meadows, river flood plains, mud flats, and wet prairies. For purposes of this element, wetlands shall be those areas regulated by the Army Corps of Engineers, Florida Department of Natural Resources, or other regulatory authority having jurisdiction over the development of wetlands
- Zones of Influence: zones delineated by iso-travel contours around wellfields, within which toxic substances will be regulated to protect the quality of the groundwater.

### RECREATION, OPEN SPACE AND CONSERVATION ELEMENT:

#### **LIST OF APPENDICES**

IV - 1	Open Space Implementation
IV - 2	Open Space Outline
IV - 3	Consultants' Reports  A) Open Space Preservation Issue Paper B) Community Character Issue Paper C) Archaeological Report D) Botanical Analysis E) Agricultural Land Use Inventory
IV - 4	Resolutions A) Resolution R-87-183 and Attachments B) Resolution R-87-281 and Election Results C) Resolution R-88-225 D) Resolution R-89-34 and Election Results
IV - 5	Recreation Sites Used for Level of Service Determination



# MEMORANDUM

# OFFICE OF TOWN ADMINISTRATOR

TO:

Mayor and Town Council

FROM:

Irving Rosenbaum, Town Administrator

DATE:

March 23, 1988

SUBJECT:

**OPEN SPACE IMPLEMENTATION** 

Open Space is composed of two aspects:

The Greenbelt - approximately 2200 acres of oak ridge, re-created wetlands, and outdoor leisure areas that can be utilized for bike-paths, horse-trails and general recreation. These contiguous areas will ultimately form a valuable recreational amenity.

Preserved Agricultural Area - this program preserves citrus groves, ornamental horticulture, cattle and other agricultural uses through purchase of land/leaseback and other incentives.

# Acquisition

Open Space will be acquired in various ways. Among the methods are the purchase of development rights, transfer of development rights and conventional land purchase. Non-ownership forms of control such as conservation easement and various forms of land reservation will be utilized. To advise the Town in areas of specific expertise, such as transfer of development rights and innovative methods to control land, we have hired the firm of Burke, Bosselman & Weaver as consultants.

It is recommended that the following types of lands be acquired:

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1. Uplands/Oak Ridges

2. Unique lands of environmental or historical value

3. Lands to be utilized to buffer residential subdivisions

4. Wetlands/Cypress Stands

5. Lands under development pressure

6. Land to tie together other parcels to form the Greenbelt (includes horse-trails, existing parks, bike-paths)

An Open Space fund should be established to provide funding for optioning land for possible purchase, and acquiring some lands. Open Space is to be separate fund, not related to the Town's capital improvement fund in any way. Some preliminary financing to establish the Open Space fund can be arranged with First Union Bank of Florida.

To further expedite land purchase, a person should be engaged to act on behalf of the Town.

<u>Preservation of Agriculture</u> A good beginning point for this program would be 600-1000 acres of agricultural use. This would involve a separate borrowing program. The loan or bond would be secured by the lease to an agricultural user. A mix of citrus, ornamental horticulture and other uses is needed. Ornamental horticulture is the best revenue producer while citrus is the least. Carrying cost per acre is about \$1200. Loss of tax revenue has little or no impact.

As preservation of agriculture is a regional issue, Broward County and other public agencies concerned should be involved in this effort.

# COUNCIL ACTION REQUESTED:

- 1. To begin land acquisition based on criteria outlined herein. Informing Council by memo as lands are acquired.
- 2. Authorize staff to negotiate with First Union for advance loan funds to establish Open Space Fund.
- 3. Authorize staff to advertise for negotiator (preferably an appraiser) to act on behalf of Davie to purchase lands for the Open Space Program.
- 4. Authorize staff to work with Broward County and other agencies to begin the Preservation of Agriculture Program.



### Introduction

The Town of Davie is blessed with natural and other resources such as citrus groves, uplands, oak ridges, pre-historic and historic resources, dairy farms and horse farms, and canals that run the length of the Town. The challenge is to preserve as much of the existing lifestyle as possible through the open space program while still recognizing that Davie is located in the midst of a growth area. The ten miles of I-595, now under construction along the Town's northern border, will have a major impact on a community of only 35 square miles. Both growth management and open space planning and implementation are issues which are addressed in the Town's Comprehensive Plan and land development regulations. It is the intent of this Open Space Plan to implement amendments to the Town's Comprehensive Plan, Land Development Code, purchase programs, on-going education programs, and other programs. The open space program is closely related to recreation, but open space is a much broader issue. While most recreational facilities will serve a dual role as open space, there are many aspects of open space--environmental protection, visual amenity and farmland -- where it will not serve any active recreational function.

### The Background of Open Space Planning in Davie

The Town of Davie began an innovative program for open space protection in December 1987. The desire to protect and preserve open space came as a response to both perceived and actual urban sprawl in Broward County. The Visions 2000 Forum, funded by the Florida Department of State, was held in hopes of making a different statement concerning urban sprawl and open spaces in Davie. At that meeting, Davie decided that "rapid population growth...has the potential to undermine [our] quality of life" and identified assets and goals:

...significant tracts of green space with growth potential and the ability to plan that growth in ways to preserve portions of the green space.,.[our] Comprehensive Plan will be the vehicle to create and safeguard [our] "town in the country" image. Low density residential designations and green spaces must be identified and maintained through [our] Comprehensive Plan and its implementing ordinances... additional green spaces should be created through the use of landowner and developer incentives....[we would like to provide] bike paths, horse trails, and sidewalks.

There has been an on-going effort to educate Davie's residents and corporate citizens about the need to protect open space and to incorporate that open space preservation into a growth management scheme. Symposiums were held on January 23, 1988 and on June 10, 1988 to further the open space goals. Such recognized experts in growth management as Dr. Lance de Haven-Smith from the FAU/FIU Joint Center for the Study of Environmental and Urban Problems, Nancy Stroud from Burke, Bosselman, and Weaver, Lane Kendig and Joel Kuperberg have participated in these open space symposiums. On March 8, 1988, the Town conducted a straw vote, as part of the regularly scheduled municipal elections, in order to identify community support for open space protection. The residents of Davie voted overwhelmingly, 94 percent, in favor of this question: "Should the Town of Davie establish a program for acquiring and preserving "Green Space" including natural areas such as oak ridges and wetlands, citrus groves, parks and recreation areas?"

The Town has also printed brochures, T-shirts and posters which promote open space protection. These have been available at symposiums, other events, and at the Town Hall. A portion of the funding was supplied by local businesses. There is also an organized campaign to attract media attention in order to further promote the open space preservation program.

In September 1988, Florida's Governor and Cabinet approved the purchase of the Pine Island Ridge, an oak ridge located in the Town of Davie. The Town will participate in preserving the Ridge by contributing the land, that the Town has previously exacted from the landowner, for park dedication.

Efforts to implement the recommendations from the Visions 2000 program were reviewed with residents and corporate citizens on October 1, 1988. The focus was on such growth management issues as annexation; re-use of the now-closed Broward County landfill for nurseries, open space and parks; downtown redevelopment; economic development and agricultural preservation; and implementing "people paths."

The Town has also established an Open Space Advisory Committee (OSAC) whose mission is to advise the Town Administrator and the Town Council concerning the preservation of open space. The OSAC has been meeting since October 3, 1988.

The Town also hired a team of consultants to accomplish these tasks:

 Identify the next increment of open space lands which the Town should purchase. The product was the identification of land and a trail system which the Town should purchase through a general obligation bond referendum to be held in March 1989. Identify the regulatory and other methods to preserve the open space which the Town does not desire, or is unable, to purchase.

Existing Conditions <Data here incomplete>

The park and open space system currently owned by the Town, the County, or other governments in the Town is identified in Map \_\_\_. (This work product is not yet complete.) The County has one major park, Treetops Park at Orange and S.W. 100th Avenue which contains a southern branch of the Pine Island Ridge. The County also owns a landfill site in western Davie which, if all its environmental problems are eventually solved, should also be available for open space. The City has \_\_ parks that are from to acres in size and scattered throughout the built up areas of the Town. In addition, the \_\_ schools have approximately acres of land of which \_ % can be classed as open space and used for recreational purposes.

### The Plan for Open Space

The purpose of the Open Space Plan is to identify the open spaces and trails which the Town intends to protect, preserve or acquire in some fashion. The Plan will be done in several stages. first stage is to identify land that clearly is an essential part of any open space plan and which will serve as the corridor for a trail system in addition to any other open space functions.

### Definition of Open Space

Open Space is land that remains open, can remain undisturbed, and is protected by the public in some manner. While open space may serve the dual functions of open space and recreation, that need not be the case. It is critical that open space include land that is to be left undisturbed for resource protection or other purposes. Open space land can be preserved for a variety of functions: to protect natural resources, to protect farmland, to preserve the rural qualities of Davie, to create entrances to Davie that give the community a stronger identity, or to provide for recreation. While the ability to remain undisturbed is important to some of these purposes, in other cases the site needs to be improved in order to create an entranceway or be used for recreation. The term "protected" in some manner is intentionally vague. While the purchase and ownership of land is important and essential for some types of open space, in other cases the public interest is served by simply keeping the land open. This can be done with easements, development rights or other techniques that may leave the land in private ownership.

# Citizen Input

In developing this Plan, every attempt has been made to obtain citizen input. This began with the advisory question on the ballot in the spring of 1988. At the beginning of this study, the consultants conducted a "Reconnaissance" to solicit input from citizens, officials, and special interest groups. This effort involved the Open Space Advisory Committee at an even more detailed level using nominal group techniques.

There were a number of predictable responses from some of the special interest groups. The horseback riding interest groups were particularly interested in trails and safe street crossings. Developers were more concerned with the land use issues associated with open space. The developers felt that, for the most part, government should purchase open space and not rely on density or other regulatory efforts to preserve it on private land. There were a number of suggestions about specific properties, mostly near the groups making the request.

One of the most important concerns that came out of this effort was not anticipated. Safety was a major concern with some of the citizens. They were concerned with the safety of children to use either trails or parks without parental supervision. They indicated they would prefer fewer parks that were safe than lots of land that could not be used. In this same group, most of whom were active in school activities, there was a preference for recreational open space rather than natural areas.

# Nominal Group Technique Results

The National Land Partnership conducted a consensus building technique known as the "Nominal Group Technique." Four questions were asked of the Open Space Advisory Committee to determine: A. their perceptions of the Town's character, B. their images of open space in the Town, C. the most important uses of open space, and D. where open space should be first acquired in the Town.

The questions the Open Space Advisory Committee were asked to rank and their responses are indicated in the following sections. The gross score is indicated after each response, with the lower score indicating a greater importance. This score gives the reader an indication of the degree to which the committee valued each response. For example, if the gross score between a response ranked first and that ranked second is only two or three integers, then a significant difference cannot be drawn between the two responses. However, if the two are separated by five or more integers, then the difference begins to be significant. Of course, as the magnitude of difference increases, so the significance of that ranking relationship gains in importance.



A. How do you describe the "character" of Davie when describing the community to someone who has never visited it?

The character of Davie should be the sum of all images about Davie. Traffic congestion, town meetings, residential streets, the friendliness of the people are but a few aspects of the character. Examples might be "western suburban" or "southern rural" or "South Florida exurbs."

	Ranki	ing/Response	Gross Score
	1.	Low Density	29
	2.		32
	3.	Different from the Rest	38
		Future Shock Growth	42
	5.	Western Suburban	44
	6.	Country Western	49
`	6.	Not a Sea of Homes	49
	8.	Line Laboute	50
	9.		55
	10.	Downhome Gentlefolk	57
	11.	Non-Stressed	5.8 5.8
	12.	Agricultural History	76
	13.	1950's Fuel	79
	14.	Open Government	81
	15.	New York Cowboy	94
		•	

Analysis. The image of an area of "low density" settlement, characterized by the trappings of struggling "horse country," in fear that growth is threatening the quality of life (shortened to "future shock growth") that wishes to remain "different from the rest" (of Broward County) seems to represent the Town of Davie according to the members of the Committee. Whether their image of themselves is called "western suburban," "country western," or "agricultural/bedroom community," or as "non-stressed," "downhome gentlefolk" the participating residents of Davie want to be sure there are plenty of "trees and pasture" and "not a sea of homes." The remaining responses, 12 to 15, were ranked so much lower than the rest, that those responses could easily be eliminated from a statement of community character.

B. What are the mental images that come to your mind when you think or speak of open space in Davie?

<u>Ranl</u>	king Response	Gross Score
1. 2. 3.	Natural habitats/fields, flowers Agricultural land/orange groves Relaxed Vistas Non-congested Relatively low-density Tranquil oasis (passive parks)	39 40 46 47 51 52
8. 9. 10. 10. 12. 13.	Equestrian activity Common green space developments	52 54 56 59 59 60 61 75 80

The visual image of open space in Davie is less sharply defined to the members of the committee than is their image of Davie itself. The evidence of this is the total range of gross score. Question A had a range of 65 points compared with only 41 points on this question. Only 20 points separate the first 13 responses about the image of open space in this question. But, in the first question, 50 points separated the first 13 responses. It should be noted, however, that the responses ranked 1 and 2 were somewhat distinguished from the rest. The importance of pastures is difference, in this question "natural habitats/fields, flowers" and "agriculture/orange groves" seem to define the important image visually. Indeed, "cows (token), horses, pastures" was ranked last (15) as a response. may have been the result of lack of clarity. Discussion during the clarifying round brought out the fact that dairy farms were rare in Davie and that cows were not a common sight. It may also be indicative that most residents do not frequent the areas of Davie where active pasturing is going on, or that the cattle may not be visually prominent, or it may be that a pasture is also a relaxed vista and a better descriptive image. In general, the small differences between the bulk of these images indicates that even for the individual there are a number of elements essential to the visual character of Davie.

# C. What are the most important uses of open space?

The use of open space can be divided into environmental, visual, agriculture, trails (jogging, horses, bicycles), private open space, and other recreational. Active parks and recreation other than trails rate low on the committee's priorities. Agriculture is also rather low as a use.



Ranking/Response		Gross Score
1.	Natural areas preservation	24
2.	Trails; non-vehicle connectors	25
3.	Passive public parks	27
4.	Swales, setbacks, buffer zones	31
5.	Preservation of waterways	32
6.	Visual (canopy roads)	33
7.	Orange groves	36
8.	Parks and recreation (active)	44

Analysis. Natural areas registered as the strongest sentiment among the members as use of open space. If combined with preservation of waterways and passive parks, which presumably would have undeveloped areas, this a clear priority. Trails for non-vehicular access which would connect passive areas and regional parks was the only important active recreation use suggested as a priority for open space use. It is interesting to note that while the members' image of Davie's open space strongly suggests orange groves (Question B), the uses preferred ranked orange groves near the bottom. However, if we view Question B as focusing on visual imagery and Question C as use, this result is not surprising, since few residents actually get to use orange groves.

# D. Where should open space first be bought or acquired in Davie?

This question was preceded with a discussion of the three open space concepts of greenbelts, greenways, and green spaces that could be applied to Davie. Greenbelts generally surround a community; greenways occur along roads, paths, canals, etc.; and green spaces are the pastures, groves, play fields and wooded lots that are not built upon. The ranking attempts to get at which of these should be the first priority in Davie's Open Space Program.

Ranking/Response	Gross Score
1. Unique Natural and Geological Habitats	
2. Unique Botanical and	9
Archaeological Habitats 3. Trails Connecting Existing	23
Parks and Open Spaces	27
4. Buffers Around Preservation Areas	34
5. Regulated Acquisition Preser- vation within Development	36
6. In-town Green Spaces	38
6. In-town Waterways	38
8. Trails Away from Traffic	45

Analysis. Clearly, the number one priority for open space purchases are the areas of unique natural and geological habitats. Botanical and archaeological areas were ranked a distant second. There is a range of 36 points within the ranking and 14 points, 39% of the total range, separates the natural area from all the others. This is a clear mandate. A trail system connecting other areas is in the second priority category with rare sites. In the Ridges, all three of these are present together. The combination of natural areas and trails to serve them is the common theme in the responses to all the trigger questions. Activity areas, as open space, constantly were shown to have low priority among the members of the committee. While all techniques for open space acquisition should be utilized together, the clear priority for use of bond funds, from the perspective of the committee, is for natural areas and trails.

## Inventory Summary

The joint venture between the National Planning Partnership and H. Kurt Kettlehut and Associates submitted detailed reports and a summary of their findings from inventories they conducted on the open space features in the Town of Davie. Their full reports are attached as Appendix A.

The inventory provides the status and qualities of open space in the Town of Davie today. It is, however, an understatement to say that the status should also include the note "rapidly changing". Davie's geographic location relative to I-75, I-595 and the Florida Turnpike leaves little time to develop a strategy and plan to preserve the qualities of open space which give Davie its character. Following are summaries of the findings of the consulting team.

## Agricultural Qualities

All agricultural land use depicted on colored infrared high altitude photos (CIR-HAP) from March 1984 were compared with 1987 tax map aerial photos. In turn, these were compared with actual ground level observation of all existing agricultural land uses within Davie as of November 29, 1988. All land currently in agriculture has been mapped. Agricultural land use was placed into the following categories: Pasture (Pa), which includes dairy cows, beef cattle, and horses; citrus (AG)CIT); plant nurseries (AG)pn), which includes field nurseries, greenhouses and shade houses; winter vegetables (AG)Wv); horse training (AG)ht), which includes horse boarding; and agricultural research (AG)rch) which is the University of Florida IFAS Research Station.

Citrus. The acreage devoted to commercial citrus groves is declining rapidly. The most notable example of this is the com-

plete replacement of nearly a square mile of citrus by an upscale development, Forest Ridge. The overall physical condition of the majority of active groves can be described as old with declining yields, dying trees, and, in some cases, apparent abandonment. There are a few minor exceptions where some trees have been replaced and interplanted with palms and other tropical ornamentals. One is struck by the proliferation of "For Sale" signs on so many of the grove properties. In all probability, the total acreage mapped as citrus is exaggerated because in some case the grove has already been sold, maintenance and production activities have recently ceased, and the grove is awaiting conversion to residential development. Without the assistance of some type of preservation program, the groves are definitely destined to be replaced by non-agricultural land uses, especially residential developments. Even with some type of preservation program, there are a number of factors beyond the bounds of Davie which make continued citrus production highly problematic. Most likely, the balance has already been tipped whereby improvement of groves is not economically viable.

Pastures. Pasture, like citrus acreage, is rapidly being converted to residential and other urban land uses. The reasons for this are very similar to those for citrus. The scope of this effort has not permitted extensive interviewing of property owners to identify the precise motives for maintaining land in pasture. Even so, it should be recognized that there are multiple reasons for the existence of pastures in Davie. Among them are the following: (1) pasture for functioning dairy enterprises; (2) land held in speculation for urban development, being grazed by beef cattle to qualify for a significantly lower property tax assessment under Florida's Green Belt Law; (3) pasture for horses bred and used for recreational and show purposes; (4) some combination of these three.

The conversion is dramatically demonstrated by the very rapid development of former pasture north of S.W. 14th Street in the far northwest corner of Davie, of the west side of Interstate 75 between Griffin and Sheridan Street, and of that area south of SR 84, west of Nob Hill Rd. into residential uses and commercial uses.

Plant Nurseries. While plant nurseries of varying sizes and types can be found dispersed throughout Davie, many are concentrated south of Griffin Road, between University Drive and the Florida Turnpike. Like the citrus groves, one is struck by the number of "For Sale" signs on the wholesale plant nurseries, often accompanied by words such as "suitable for commercial development." The pressure to sell and the conflict of increasing urban uses surrounding what used to be rural wholesale nurseries contributes to the shifting of this agricultural activity to other locations outside of Davie.

One activity which will postpone (but probably not ultimately prevent) the conversion process is fueled, ironically, by the land use transition itself. As residential and commercial development occurs on former agricultural lands within and around Davie, there is a substantial demand created for landscape materials (palms, shrubs, hardwoods, etc.). It is possible to plant new citrus trees in those areas of the groves where older trees have been removed and, in the spaces between the citrus seedlings, plant landscape material. The landscape materials produce a revenue stream while the citrus is maturing. Then, as the citrus tree develops a larger crown and begins to yield fruit, the landscape material is sold off and either not replaced or replaced by low-growing materials in line with the trunks of the citrus trees. The degree to which this is occurring is small when compared to areas going out of citrus completely to make way for urban development.

Winter Vegetables. The very small area devoted to winter vegetables and strawberries is not likely to be replaced by urban activities. This land is located directly beneath the high voltage transmission lines which traverse the area on an east/west axis between Griffin Road and Stirling Road, east of University Drive. The production is limited in scale and appears to be marketed through a retail produce and garden center adjacent to the fields. In addition to the winter vegetables and strawberries, this space beneath the transmission lines is shared by plant nurseries which also are not threatened by residential and commercial development. By the same token, since this area comprises a very long, narrow strip perpendicular to the north-south streets which carry local traffic through the area, it does little in the way of contributing to the rustic appearance of Davie.

Summary. Agriculture in Davie is best described as a stressed industry under tremendous economic pressure. For most landowners, it is only a question of how long to continue, for they have already decided that agriculture is an interim use of the land. Thus, if Davie wants to preserve agriculture, it will have to have a very aggressive program.

# Prehistoric and Historic Qualities

Florida State Archaeological Site Files were examined for known recorded sites in Davie corporate limits. Historical sources in the FAU library were also examined. This was followed by a meeting with Robert Carr, <title>\_\_\_\_\_\_, in Miami. Both infrared and low altitude aerial photographs were used to identify sites and key areas for this study. Two days were spent in the field establishing "ground truth" of our analysis. Special attention was given to the present condition of each site as compared to photographs taken April, 1987. All recorded sites were then plotted on the low altitude section maps and subsequently transferred to the CAD base maps.



The City of Davie possesses a number of distinctive and unique prehistoric and historic period landmarks. Indeed, within the corporate boundaries of this municipality lie some of the most historically significant and relatively intact archaeological sites presently known in South Florida.

Given its geological history and physiographic features, archaeological sites located in Davie are found (to-date) solely in ecological zones characterized by elevations considerably higher than surrounding landforms. They are the prominent marine-formed remnant sand dunes or barrier reefs that run through portions of western Davie. Known as Pine Island to many, it includes a western extension known in recent times as Spooner's Ridge or Long Key. This ridge, with elevations up to 29 feet above sea level, forms a series of upland islands.

Archaeological sites have also been found in small hardwood tree hammocks scattered throughout Davie. These, too, were formerly islands in a general wetland ecosystem which preceded major land reclamation projects in the late 1800's.

While an intensive, systematic survey and controlled excavations were beyond the scope of this project, sites presently known and recorded with the State of Florida's Division of Archives attest to archaeological sites on Pine Island, its western extension and small hardwood tree hammocks within the corporate boundaries of Davie. It is most likely that more archaeological sites will be found in these ecologically distinct zones should intensive surveys be conducted. No excavation or clearing should be allowed along the ridge without a detailed site inspection by a qualified person.

Summary of Archaeological Site Information. A total of twelve archaeological sites have been recorded for Pine Island. On the basis of limited tests and surveys, six sites have both Seminole and prehistoric period components. Seven prehistoric midden sites cover a wide time range. Four additional sites are located on ridges to the west of Pine Island Ridge and on small hardwood tree hammocks. These are primarily prehistoric, one possessing an Archaic Period component (8Bd00052).

Sites vary in terms of the degree of disturbance but many are well preserved middens showing only partial damage.

# Natural Botanical Qualities

The open spaces of the Town of Davie have been inventoried with respect to their vegetation. Each open space, three acres or greater, was examined and categorized (if applicable) as to plant community, major plant species, previous treatment, and use.

Most of the dry land within the corporate limits was created when the general area was drained in the first half of this century. Because of this, most of the present vegetation is not endemic, except on the centrally located elevated Ridge Area (Pine Island) and on the eastern-most located wetland along State Road 84. Thus, the only major areas significant to open space preservation from a perspective of natural vegetation are the ridges (Pine Island, Spooner's Ridge, and Long Key, as they are commonly known) and the wetlands located at the extreme eastern end of Davie. There are also some hardwood hammocks and other small features that represent open space or planning opportunities.

<u>Ridges</u>. The relatively high ridge presents a strikingly different ecology from the surrounding low plain. Huge ancient oaks cover major portions and are the dominant canopy species. They produce the biotic portion of the environment that governs the growth conditions of all the other flora.

There are two species of oak (Live Oak and Laurel Oak) that create over 90 percent of the vegetation canopy. Very large Slash Pine infiltrate the oak in some areas. The understory is mostly a composite of Red Bay, Mastic, Pigeon Plum, Red Mulberry, White Stopper Strangler Fig, and Cabbage Palm.

The shrub layer is composed mostly of Wild Coffee, Saw Palmetto, Beauty Barry, Satinleaf, Snowberry, Wild Lime, and Marlberry. Vines make up an important part of the total flora. Some of the more numerous species are Greenbriar, Muscadine Grape, Moon Vine, Poison Ivy, Rosary Pea, and Virginia Creeper.

The ground cover is made up of a diverse spectrum of plants, ranging from creeping woody shrubs to herbs. Representative species are Boston Fern, Swamp Fern (mid-sorus fern), Caesar's Weed, Comlina, Life Plant, Ground Plum, Pteridium (Fern), Sida, and Spanish Needles.

The dominant oaks, themselves, provide habitats for a number of epiphytic species (air plants) whose individuals literally cover many of the large branches. The major species of epiphytes found here are Resurrection Fern, Cabbage Palm Fern, Cardinal Air Plant, Spanish Moss, Tillandsia Recurvata, and a Wild Orchid (Encyclia Tempensis).

Portions of the Ridge vary in disturbance depending upon the intensity of man's incursions. Some areas seem untouched and contain a minimum of exotic (non-native) plant species, while other portions may be either denuded of understory vegetation, leaving only the great oaks, or contain a proliferation of exotic species that have successfully out-competed native species.

<u>Wetlands</u>. The Wetlands is a combination of valuable fresh-water swamp and march lands that are now rarely extant in areas pro-



tected by governmental and certain private agencies. Its plant species are largely sub-tropical to tropical in origin.

The Wetlands lies within the extreme northeastern corporate limits of the Town of Davie, Broward County, Florida. It is roughly isodiametric in shape. More specifically, it is located in Sections 19 and 20 Township 50, Range 42. State Road 84 runs southeast-northwest through the northern one-sixth of the area. roadway thus forms the northern boundary of the major portion of the Wetlands. Davie's town limits form the western boundary, and the South New River Canal forms most of the eastern and the southern boundary.

The soils that underlie the Wetlands of Davie, as defined by the U.S.D.A. Soil Conservation Service 1980 Soil Survey of Broward County-Eastern Part, consist of two types:

Lauderhill muck. The Lauderhill series consists of nearly level, very poorly drained soils in broad flats in the Everglades. These soils form in hydrophytic plant remains mixed with a small amount of mineral material. Under natural conditions, these soils are covered with water most of the year. Most of the acreage of this soil is in natural vegetation that consists of sawgrass.

Plantation muck. The Plantation series consists of nearly level, very poorly drained soils in broad flats along the eastern edge of the Everglades. These soils formed in unconsolidated marine sediments -- a muck surface layer (overlies) a sandy mineral material. Most areas of this soil are in natural vegetation.

The Wetlands is divided into two major plant communities: swamp and march-wet prairie. The terrain of both areas is extremely flat with an elevation of approximately two feet.

The swamp occupies generally the eastern one-half of the area and covers the entire shore line of the South New River Canal along the Davie town limits. The greater fertility of the soil of this eastern half and intrusions of minor water passages into the swamp (flowing water) have fostered the dense growth of native tree species. Pond Apple, Cypress, Strangler Fig, and Willow dominate the vegetational complex. Fresh water and migrating game fish reside here. Also, tropical and subtropical aquatic birds of the Heron and Egret genera feed and rest here, and the protected Osprey lives in this swamp.

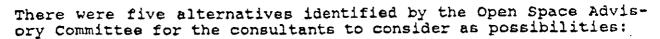
The western marsh-wet prairie supports a radically different ecology. In this area, Cypress and Melaleuca trees, though dominant, are scattered enough to form an open type of growth. Sawgrass and other marsh/prairie grasses and broad-leaved annuals

make up the ground cover. The sparser growth of this western portion of the Wetlands is due to the less fertile and slightly drier soil conditions coupled with periodic burning. The periodic burning of the marsh-wet prairie kills off most of the swamp bush and tree species (exceptions: cypress and melaleuca) and allows the more rapidly growing sawgrass and marsh-wet prairie annuals to regenerate. Animals indigenous to the marsh-wet prairie are red-winged and marsh hawks, raccoons, opossums, fox, armadillos, and various aquatically-oriented snakes and turtles.

# Hardwood Hammocks

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# Acquisition Alternatives



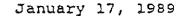
- 1. The Ridges
- 2. Wolf Lake
- 3. Trails linking the various open space areas
- 4. The entrances to the Town
- 5. Improvements in conjunction with the Town Center Plan

The consultants have reviewed each of these areas and narrowed the number of alternatives to the first three. The clear primary conclusion of the research presented in this report is that the ridges should be the target for the purchase as soon as practicable for the Town. The ridges are identified by the consulting team as extremely rich in both archeological and botanical qualities. The ridges have been little disturbed by agriculture and except for some exotic vegetative species, remain natural. The linear nature of the ridges make them excellent candidates for trails as well. The Open Space Advisory Committee identified, as its first and second priorities, the preservation of natural areas, archeological areas and the creation of trails to connect them. As much of the ridges should be purchased by the public as possible and in addition right-of-ways for trails between the ridge segments should be acquired as well.

Wolf Lake has been retained in two of the four options. The area is an unique area because of its water quality, large vegetation (non-native) and general open space qualities. It is also clearly a target of opportunity, the Town has an option on the acquisition for one year. Thus, if the town wants this property, it should be on the acquisition list at this time.

The town entrances were deleted for several reasons. The most important is the degree of analysis needed to make decisions on the entrances. While the land at the entrances has been identified, there is no consensus as to what, if anything, should be done there. The entrances are an area of concern that is related to the type of open space community that Davie desires to be and will be studied in Phase 2. It makes sense to wait for these additional studies before making recommendations on acquisition. A similar problem is presented by the Town Center Plan. Once that plan is adopted by the Town Council, then its relationship to open space planning can better be assessed as part of Phase 2.

The planning consultant team is recommending four alternatives for your consideration. These alternatives cover a range of costs from \$5,000,000 to \$12,000,000. They all focus on the first three areas identified by the Open Space Advisory Committee, but they have been structured into four general alternatives with different combinations of these three elements. In most



cases, a range of acquisition costs has been identified. Often only a portion of a property is needed to accomplish a specific objective, but additional land would allow the system to meet a broad range of objectives. The four alternatives are outlined below.

## 1. The Ridges

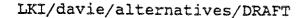
The acquisition of the Ridges involves the portions of the Ridges that lie west of S.W. 100th Avenue which have not been acquired by others. There are a few pieces of the Pine Island Ridge in Davie that remain to be preserved. The major effort will be the acquisition of Long Key Ridge. There are remnants of the ridge near Hiatus Road that are not part of the major ridge formations, and are isolated from the Pine Island and Long Key Ridges which also can be included. The Ridges have shown up in both the environmental and archaeological work as the most important features in Davie. From the Community Character studies, the Ridges immediately stand out as important visual features. logical minimum acquisition targets. The Ridges have been recommended as the minimum purchase, and their acquisition is a part of all four alternatives. A bare minimum acquisition program with little land beyond the ridge formation itself would consist of the acquisition of 168 acres at a cost of \$5,000,000. A more expansive view of the Ridges would result in the acquisition of 315 acres at a total cost of \$8,000,000.

# 2. The Ridges and Wolf Lake

Wolf Lake is an old rock pit that has been abandoned for a period of ten years. The lake has a good water quality that makes it attractive as a recreational resource as well as open space. Its location in southeastern Davie makes it accessible to the more populous eastern end of Town. It adds 25 acres of lake and 24 acres of land to that proposed for the Ridges. The Wolf Lake land has been offered to the Town for \$1,000,000 and awaits only the funds to make its acquisition possible. Therefore, this alternative would result in a total of between 217 and 364 acres for the two resources at a cost of from \$6,000,000 to \$9,000,000.

# 3. The Ridges and connecting Trail System

The Ridges are not connected. The system proposed here would be a trail system to connect the various portions of the Ridges to each other with a minimal connection to the Griffin-Orange Road trail system. In some cases, the trail system would involve acquiring whole portions of land that might be used for a variety of open space purposes as well as easements or narrow trail corridors. All trails are expected to provide land for horse, pedestrian and bicycle traffic. That could mean either a single area that would provide for all user groups, or a system of parallel trails that would serve one user group or another. Again, as



with the Ridges, there are several alternatives. The most extensive would involve 12 acres and cost \$300,000. The more conservative approach of minimal acquisition would acquire eight acres for \$200,000. These alternatives would result in several miles of trail connecting the various segments of the Ridges. As a whole, this would result in from 176 to 327 acres at a total cost of \$5,200,000 to \$8,300,000.

# 4. The Ridges, Wolf Lake and a connecting Trail System

This is the most expensive alternative with both the Ridges and Wolf Lake being acquired and a significantly longer trail system being established. The trail system would be more expansive and would include everything in Alternative 3, plus additional trails to Wolf Lake. There would be about 17.3 miles of trails, about 105 acres of additional land, and a cost of from \$1,600,000 to \$3,000,000. The total package would range from 322 to 469 acres at a cost of \$7,600,000 to \$12,000,000.

These alternatives represent a full range of benefits to the community. The Open Space Advisory Committee and Town Council will have to evaluate these alternatives in terms of total benefit versus the cost.

### OPEN SPACE PRESERVATION

# Issues Paper Number One



### Introduction

This paper presents discussion and recommendations for implementation pertaining to conservation, protection, and enhancement of open space and natural resources in Davie. Open space has been found to be the prime shaper of community character in Davie. In the workshops with Davie citizens, open space and especially open space related to natural resources were found to be of primary importance to those participating. The suburban, estate, and rural character types that are important to Davie are all dependent on open space.

Few environmental protection or open space programs have failed because nobody wanted to protect open space. Most frequently, they have failed because the community did not understand the consequences—what the price of preservation would be and who would pay. In order to preserve open space the government must be willing to either adopt appropriate regulations, spend money, or both. Davie presently has a referendum on the ballot for the acquisition of open space. Thus, the Town has taken its first steps towards the preservation of such critical resources.

While this paper will concentrate on regulatory approaches to open space preservation it will also address the alternatives that do not involve regulations. The concentration is on the regulatory approaches because the only real issue with the non-regulatory approach is how much the community can afford. With regulations two opposing views of the land are involved, land as a resource and as a commodity. Each view results in a different group paying to preserve the open space. The focus is therefore on the equity questions about how to and who pays for an open space implementation program. Although most property owners recognize the need for such regulations, they are loath to have them applied to their land.

# Legal and Equity Issues

One of the difficult problems in adopting open space regulations is the result of a very direct clash between two views of land. We can all agree to platitudes that call for the protection of open space to protect natural, scenic, and historic resources or to protect the character of the community. Yet, if it is our own land on which development is to be severely limited, then we evoke the rights of property owners with equal vehemence.

Generally, the landowner views land as a commodity to be bought and sold for profit. The community views the land as a resource



that functions as part of an overall system, with the private landowner being only a temporary trustee of the land. Conventional regulatory responses have heightened the conflict between these two views by focusing on density and lot size as the standards for environmental protection. In Davie, regulations have not protected the open space. The vast majority of open space in the community is open simply because development pressures have not focused on Davie.

Open space regulations proposed must be formulated in such a way that they are acceptable to the community as a whole and accomplish the purposes for which they have been passed. These regulations must take into account the degree to which each method of protection actually responds to the open space objective. The central question will be who pays for that protection?

This paper addresses the technical question of whether or not a protection measure is effective; it also focuses on who must pay the costs. This should assist the readers in evaluating different regulatory and nonregulatory techniques as they affect individual landowners and the community. Clearly, a regulation that ignores the interests of landowners is more difficult to adopt than one that at least tries to strike a balance between the landowner's investment point of view and the community's public resource protection point of view.

The second issue is more difficult, because it is a result of an idealistic attitude that often has no substantive basis. "I don't want anybody telling me what to do with my land," is a typical reaction to proposals for land use regulation. That position is clearly counter to the planning objectives of the State of Florida since local government is mandated to have regulations or other programs that implement the community plan. There are many landowners who view zoning as an infringement on their Constitutional rights. These people believe that they should be able to use their land in any way they can to maximize the return on their investment. In Florida, these beliefs are clearly not an accurate reflection of either Florida or Federal laws. The limits of regulation in Florida will be explored.

Since resource protection regulations may alter the value of property, the clash between the different views of land as a commodity and a resource becomes focused in terms of legal and equity issues. Regulations designed to preserve visual resources, sensitive natural areas, or historic sites may substantially alter a landowner's development expectations. The underlying issue—who pays for the benefits the entire community reaps—is the same whether approached from an equity standpoint or a legal one. The outcome of these two approaches, however, can be quite different.

# The Taking Issue

This issue seems to arise whenever a proposed zoning policy results in a significant reduction in development potential. The proposed regulations generally give rise to the following, incorrect, alle-"The Town is taking my property without paying--that's unconstitutional."

Indeed, both the Fifth and Fourteenth Amendments prohibit the deprivation of property without due process of law. The Fifth Amendment also provides that private property shall not be taken for public use without just compensation; the Fourteenth Amendment requires persons be given equal protection by the laws.

Exploring what the word "taking" means may prove useful, particularly since popular press reporting of the recent Supreme Court cases was inaccurate and sensational. "Taking" is usually interpreted differently by laymen than by professionals. A legal taking and what would seem to be a taking in the eyes of a landowner or the general public (from an equity point of view) are often not the same. Over the years, "takings" litigation has shown that even extreme reductions in land values caused by land use regulation may not constitute a taking in the eyes of the court. While the exact definition of a taking still eludes the legal profession and the courts, clearly, substantial reductions in property value can be sustained before a regulatory action may be considered a taking, as defined by the Fifth Amendment.

Justice Brennan, in his famous dissent in San Diego Gas & Electric v. City of San Diego, first noted that the U.S. Supreme Court has been unable to develop any "set formula to determine where regulation ends and taking begins." In a footnote, however, he adds "after all, if a policeman must know the Constitution, why not a planner?" Each case, therefore, must be decided on its own merits, leaving both municipal lawyers and the landowners' attorneys free to argue their positions.

While there is no hard and fast rule about what is definitively a taking, there are a number of legal cases that shed light on the issue. First, however, it is important to note that most cases involve two basic tests: 1) Does the regulation bear a reasonable relation to the public health, safety, and welfare; and 2) Does the regulation provide a reasonable beneficial use of the land. With respect to the former test, the courts have continued to expand the concept of a valid public purpose with regard to regulations--even regulations enacted to preserve aesthetic qualities have been upheld. Therefore, resource protection regulations based on an aesthetic purpose are valid.

The second test is more arcane: what is a reasonable beneficial use? Again, this test must be considered on a case-by-case basis, but, in general, determination of reasonable beneficial use consi-



ders both the value and use of the property. The first zoning case heard by the U.S. Supreme Court held that a mere diminution in value did not, by itself, constitute a taking. In this case, Village of Euclid v. Ambler Realty Co. (1926), the landowner's property value was reduced by 75 percent. In other cases, reductions in value up to 90 percent have been sustained. Thus, while the precise reduction in value that constitutes a taking in the eyes of the Court is unknown, very substantial diminutions in value have withstood judicial scrutiny. In many cases, the diminution is not in value but in expectations. If there is a beneficial use, the courts are not particularly sensitive to speculative expectations.

Nollan v. California Coastal Commission (1987), addresses the public use factor in determination of beneficial use. The Nollan's property value was not particularly diminished due to the action of the Coastal Commission; rather, the use of the property was affected. Justice Scala, writing for the majority, noted:

...where the actual conveyance of property is made a condition to the lifting of a land use restriction ...there is heightened risk that the purpose is avoidance of the compensation requirement, rather than the stated police power objective.

In this case, the California Coastal Commission had essentially required that the Nollans contribute a portion of their property to the public--they could not use that portion of the property for any other purpose but to provide public access to the beach.

Adding to the confusion is the difficulty in simply determining the value of a piece of property. The speculative or development expectations of a landowner may not serve as the basis for measuring value reduction or the notion of reasonable beneficial use. Wetland cases in Wisconsin (Just v. Marinette County), New Hampshire (Sibson v. State), and Florida (Estuary Properties, Inc.), have been a judicial recognition that natural land forms may not be destroyed to create value. A paraphrase from Estuary Properties, Inc. is that the owner of a swamp owns a swamp; the Constitution does not protect the development expectation created by filling the swamp.

In the <u>Estuary</u> case, the Constitutional interpretation also considered fishing to be a reasonable beneficial use of the swamp. In a case involving agricultural protection, the Illinois Courts upheld an agricultural zoning district with a 160 acre minimum lot size in McHenry County; a county that is about 45 miles from the center of the City of Chicago and part of the metropolitan area. The 160 acre zoning replaced five acre lots in this agricultural district, so the zoning change resulted in very different development expectations and real property values.

Finally, the courts seem to be increasingly willing to recognize the fact that a large portion of the value ascribed to a property is not a right of the landowner but, rather, the creation of a community's investments in public facilities (Penn Central Trans. Co. v. City of New York). This may lead to discounting the degree of the reduced value, making it more difficult for the property owner to demonstrate that a taking has occurred.

Takings decisions are further complicated by the willingness of the courts to consider other elements of the community's program as compensation. In Penn Central, the availability of transferable development rights was considered to be compensation. Legal commentators seem to agree that the courts have invited communities to use such tools to avoid the taking issue. In the recent Keystone Bituminous Coal Association v. DeBenedictis case, the U.S. Supreme Court found that Pennsylvania could regulate the amount of coal taken to prevent surface damages even though the coal companies had purchased the mineral rights.

Despite all the press on the First Evangelical Lutheran Church of Glendale v. County of Los Angeles, the issue of what constitutes a taking has not been altered. Prior to this case, if a regulation was unconstitutional, the courts did not force monetary compensation from the offending jurisdiction; a repeal of the restriction was considered a suitable remedy. First Evangelical held that property owners are entitled to monetary compensation if a regulation is found to have "taken" their land--even on a temporary basis. Simply put, this case says if a taking occurs, then compensation is a legitimate form of relief. In this case, a decision was never made as to whether or not the floodplain zoning actually constituted a taking.

There are two more elements of the taking issue that should be discussed. One element is the difficulty in convincing the Court to hear a "taking" case. Four times in the last six years, the U.S. Supreme Court has considered "taking" cases. In all four cases, the Court found that the case was not ripe for adjudication on the taking issue. In MacDonald, the Court appears to suggest that a developer may have to be turned down repeatedly for widely differing plans in order to have suffered damage. The majority in MacDonald noted that: "Rejection of exceedingly grandiose development plans does not logically imply that less ambitious plans will receive similarly unfavorable reviews."

For the landowner, the test will be exceedingly difficult. The most colorful reaction to this is in Bolemus v. Kirby from Rhode Island where the Federal Court stated: "So long as the State offers a suitable prospect for recourse in respect to the alleged "taking," a landowner must mine that quarry before panning for gold in the federal hills."

Thus, proving a taking has occurred is difficult under both Florida

and national law. Landowners must prove that they have been deprived of all beneficial use of their property. Furthermore, they must prove that all remedies have been exhausted and that the case is ripe for decision. If the community has made any attempts to mitigate the impact of the regulations, then landowners must prove that the compensation offered is not adequate. Ultimately, the legal definition of the taking issue may be unimportant given the following review of the economic impact of the various proposals for preservation.

# Deprivation of Property

Deprivation of property is a substantive due process concern that questions whether the governmental response to a problem is, in fact, appropriate. The aforementioned Supreme Court case, Nollan v. California Coastal Commission, gives weight to this form of appeal. The Nollan decision indicates that the courts may be more inclined to review the degree to which regulations match their The legal test for deprivation of property requires several stages:

- Stage 1: Is there a valid public purpose?
- Stage 2: Are the interests of the public generally, as distinguished from those of a particular class, such that they require the regulation?
- Stage 3: Is the mechanism used for achieving the public goal a reasonable approach?
- Are the means used to achieve the goal in balance Stage 4: with the public benefits?

### Stage 1 & 2

The validity of protecting natural resources and historic sites is well established. Open space objectives that address resource protection are well recognized. The courts, including the U.S. Supreme Court, have recognized that governmental regulations serving aesthetic purposes are legitimate. The general public will clearly benefit from the protection of open space in Davie on aesthetic grounds. As indicated in the community character paper, open space is an essential part of the community character of Davie. The protection of the character of a community, its land uses and lifestyle are well established in the law. No single group is singled out for regulation, since open space regulations are generally likely to be district wide.

# Stage 3: Is the regulation reasonable? Or is it arbitrary and capricious?

To determine whether a regulatory mechanism is reasonable, most

states give the benefit of the doubt to elected officials. That is, even if the means that elected officials have selected are fairly debatable, the courts have generally been unwilling to substitute their judgment for that of the local officials. In the past, only if the means selected did not really relate to the achievement of the desired objectives would the courts find the regulation arbitrary and capricious. The Nollan decision, however, raises the potential of a heightened judicial scrutiny for the connection between the actual protection achieved and the means to do so.

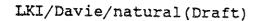
In dealing with open space issues, focusing on community needs for the open space and the exact form of regulation that is used is critical. In general, different zoning districts that represent different community character types provide a tight linkage between open space and community character. Where there are environmental resources that the open space regulation is protecting, an added level of need is established. The legal difficulty arises where other types of open space needs, such as regional recreation needs, are placed into the regulations. Parks, beaches or trails open to the general public are typically publicly owned. Open space regulations that attempt to force a land ownership transfer are clearly suspect. The goal, thus, has shifted from protection to use.

# Stage 4: Does the end justify the means?

Any regulatory technique that does not balance the cost of regulation with the public benefits received has overstepped the police powers granted by the state. In more colorful terms, the courts have told local government that it cannot use an ax to do a job more suited to a scalpel.

The difficulty in this test for deprivation of property is that the majority of the burden is generally placed on the landowner. Thus, although a regulation may produce great public benefits, it may be too onerous on individual landowners. Where the balance rests is a grey area that must be decided on a case-by-case basis—there is no firm standard that can be applied to evaluate whether an individual regulation meets or fails this test. Yet, in evaluating a series of alternative environmental approaches, it is quite easy to place them on a relative scale. Very conveniently, the issue of open space protection is the conflict between the commodity and resource views of the land; therefore, each implementation strategy's performance can be evaluated according to each view.

Two aspects of the issue must be evaluated in order for the Stage 4 test to be complete. On one hand, the extent to which a regulation results in a loss of value must be measured. The greater the economic loss imposed by a regulation, the greater the likelihood that a deprivation has occurred. On the other hand, both



the success of a regulation in achieving its intended goal and the degree to which alternative regulations are successful in achieving the same results must be measured. Although the courts hesitate to substitute their judgment for that of local officials, if a regulation is clearly inefficient in either its implementation or with respect to other available measures, the courts may rule a deprivation of property.

The two sides of the Stage 4 issue must be taken together. strongly protective regulation of an important open space with strong community benefits having a great deal of economic impact on the landowners is more likely to meet the test than a regulation giving little protection to a resource but having significant economic impact. The ideal regulation, therefore, is clearly one that provides the highest level of protection with little adverse economic impact.

# Equity

Ultimately, all the legal concerns may be unimportant when measured against the political consideration of the equity issue. It has long been clear that land use professionals and lay people have different perspectives on the issue. The legal limits of equity are much more stringent, tilted substantially in favor of the public than a more populous view. Before any regulation can be challenged in the courts, it must be adopted. While this paper has tried to identify the legal limits of open space protection in terms likely to be leveled at the Town of Davie during a zoning hearing, these terms have a different meaning to legislators. In order to separate the rhetorical responses, the term "equity" is used rather than terms such as "taking and deprivation" that clearly have legal meaning. The legislative branch of government is supposed to balance the needs of different segments of society to ensure that the burdens of regulation are equitably distributed. Equity as to on whom the burden of open space protection regulations falls is, therefore, an important governmental concern.

One of the major reasons that many well-intentioned efforts to protect open space have failed is that the proponents of open space protection have read the law and then attempted to enact regulations that push the limits of what has been upheld by the courts. This results in a political battle between those with different perspectives of the land. In most cases, it is the open space that loses out.

The best approach is not to see how far to lean towards one view of the land or the other, because that would only encourage a "windfall" and "wipeout" approach to regulation and would fail to protect the interests of both parties. Instead, careful construction of the implementing regulations is necessary in order to ensure that the regulations are evenhanded. Balancing mechanisms within the regulatory process can be used, such as clustering development in order to reduce impact. Escape mechanisms can also be provided that permit greater destruction of a resource in extenuating circumstances if there is suitable mitigation either on-site or off-site.



As the following alternative regulatory and nonregulatory techniques are reviewed, the various legal and equity issues should be carefully considered.

# Alternative Open Space Protection Techniques

There are a variety of techniques that can be used to protect open space in Davie. Some are zoning techniques, however, other approaches, including subdivision regulations, can also be used. The following is a list of these available techniques:

## Zoning Techniques

Large Lots
Very Large Lots
Overlay Zones
Clustering
Conditional Uses (including Planned Unit Development--PUD)
Performance Zoning

## Other Techniques

Environmental Impact Statements Land Acquisition Conservation Easements Transferable Development Rights

Each of these will be discussed in detail in the following sections. In some cases, there will be several variations of these techniques examined in order to fully explore all of the possibilities of the technique presented.

Before beginning, it is appropriate to sharply define open space so that we know what is sought. In general, open space is land that could be left in an entirely natural state or farmed. Generally, it means that it is outside the limits of buildable areas on lots and outside right-of-ways. While deed restrictions can be used to preserve open space on private land, and park land is clearly open space, the definition of open space should be land that could remain natural or in agricultural use.

### Large Lot Zones

The large lot, whether it is a minimum of one acre or ten, is a commonly used open space response. The problem is that large lots

do not really create open space in the terms of its definition. These lots are generally too small to support agriculture and without deed restrictions or other open space preservation techniques cannot really provide open space as defined. Land that is mowed and manicured is part of the yard and when the entire area is developed, the borrowed open spaces that presently provide Davie with its character will be lost. Early housing in Davie were modest one story buildings for the most part located on one or more acres. Today, the homes are larger, often two stories, and the rural qualities are lost. In fact, Davie is finding, just as many other suburbs have, that lots once thought to provide an open feeling are being overwhelmed by the scale and size of larger homes being built today.

Large lot zoning can be counter-productive in resource protection because the homeowner will often want the dwelling placed in the most attractive location which is likely to be the most environmentally sensitive. It also increases the amount of land disturbed on a per dwelling unit basis.

In terms of community character, developments in open areas—that are characteristic of most of Davie—will result in a suburban character of up to 3 or 4 acres per dwelling. Three or more acres are needed to preserve an estate character. A rural character cannot be established using this technique. The present zoning in much of western Davie is 1 acre. In general a more estate—like character would require a down—zoning which is legal, but would clearly reduce the commodity value of the land.

While many communities have a large lot zone that is typically called "agricultural" and may even have a purpose for preserving agriculture, the fact is that large lots have never been successful in stopping development. Large lot zoning simply limits the number of dwellings that can be built.

### Very Large Lots

Very large lots are generally in excess of 20 acres. The most common size is in the 30 to 40 acre range. There are some districts with minimum lots sizes of 160 to 320 acres per dwelling unit. These are generally effective in preserving farmland or any other natural resources and they provide large amounts of open space. In Davie, if the purpose of the open space was to protect agriculture, then the 20 to 30 acre lot size would be adequate. This is the best form of zoning to protect farmland.

Other than wetlands (which are regulated by others and can not be intensively developed), the other natural resources in the Town are not configured in such a way as to require this form of protection.

The very large lot zones recognize only the resource aspect of the land. The commodity value of the land falls to agricultural value which ranges from \$20,000 to \$30,000 per acre. If agriculture is the purpose of the regulation based on very large lots, it is sustainable by the courts.



# Overlay Zones

Overlay zones are typically used for natural resource protection, and would impose a more stringent set of regulations within the underlying zoning district. Typically, floodplain districts are overlay zones. In Davie, the ridges would also be a logical candidate for protection with an overlay zone. In reality what the overlay zone does is place another zoning district in place over the selected areas. Overlay zones are not of much value for other types of open space protection.

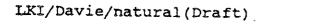
# Clustering

Cluster zoning provisions regulate by development density instead of lot size. The lots can be clustered (grouped tightly together) to avoid building on unsuitable areas of the site, thus making it possible to locate development where it will do the least damage to natural resource features. The theory behind clustering is excellent.

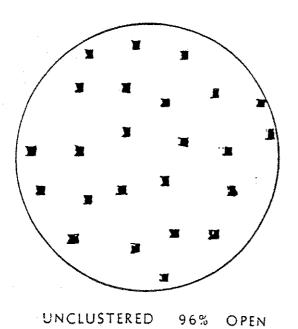
For general open space preservation purposes, clustering is the best solution. Clustering by definition creates open space. A concept known as the paradox of clustering is shown in Figure 1 and indicates that clustering is what creates open space, while maintaining a given density. Clustering is an effective regulatory method of providing open space without altering the basic density of use, thus it does not alter commodity values of the land. If lots are reduced from 1 acre to 1/2 acre, then 50% of the site will become open space. Large and very large lot zoning all rely on reduced densities.

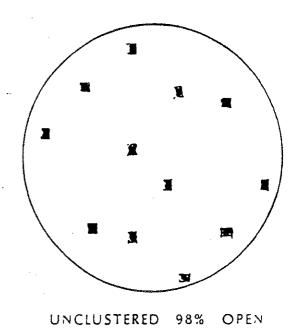
An attractive natural resource feature on a lot generally results in the homeowners wanting to place their homes in the most sensitive areas even though the purpose is presumably to preserve the natural resource. Consequently, some additional regulations or review is needed to ensure that the highest level of protection is achieved. Clustering, however, does provide the needed flexibility to work with environmentally sensitive sites without severely reducing the development value of the property.

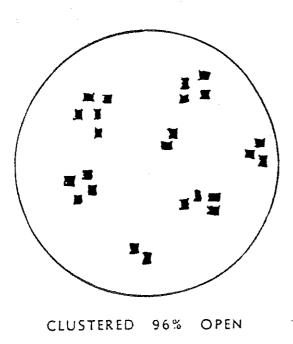
Cluster provisions, as typically used, provide for only a modicum of clustering, leaving perhaps 15 to 30 percent open space in a development. In Davie, typically 20% of the site is going to have to be open just to provide for storm water detention. At a maximum, clustering will need to have about twice the open space needed for detention. This allows for more flexible and efficient

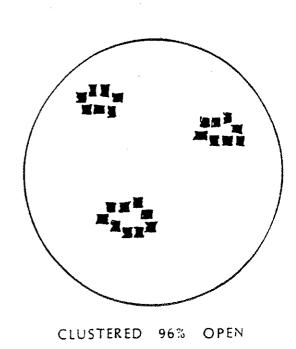


# PARADOX OF CLUSTERING









site development. More extreme forms of clustering can be used so that open spaces will dominate to create estate or even rural characters.

There is no question that at any given density clustering is less detrimental to the environment than conventional zoning at the same densities. In all cases, clustering provides needed flexibility to work with the land. The biggest advantage that clustering has over the conventional large lot technique is that it is usually possible to achieve a given level of protection at a slightly higher density. This increase in density should not be feared; it should be viewed as a means of providing an incentive to landowners for sensitive design.

Clustering is essentially a design concept. It is also used in conditional zoning, PUD's and performance zoning. Since clustering generally produces better plans, it is recommended that it be permitted as matter of right at the density of other permitted uses in the district.

### Conditional Uses

There is a wide range of conditional use techniques. No matter what the underlying technical approach is, all conditional use approaches share one element in common. They permit the Town to evaluate a project according to a flexible standard. The elected officials have the power to grant, deny, or approve, subject to conditions. In theory, the conditional use process permits the Town to attach additional conditions to the project's site plan to ensure that environmental, visual, and historical resources are protected. In practice, the criteria or standards for approval are either too vague to ensure the desired results, too rigid to permit a design that protects the environment, or subject to political whim.

The problem is that conditional uses need to be used to provide developers with an incentive to use the process. The developer should have something to gain. Since that is nearly always density, the conditional use process usually produces conflict with neighbors. In general, it is a poor concept for open space The developer has a choice whether to seek a preservation. conditional use or not. Given the delay that is likely to be involved, the density bonus associated with this approach would need to be large.

The conditional use process is sharply dependent on the quality of the review board, the preciseness of the standards, and the ability to quantify any of the standards. Some systems have elaborate scoring processes that are intended to reduce the arbitrary elements of these approvals. But, while some very good developments have occurred under some form of conditional use permit, so have some of the greatest travesties. Inconsistency

is another reason to be cautious of this alternative.

# Performance Zoning

This form of zoning was developed, for the most part, to provide an alternative to both traditional zoning and conditional use techniques for protecting environmentally sensitive lands. It integrates clustering as an important aspect of the performance standards. Performance standards, the basis of performance zoning, contain built-in safeguards to protect natural features and visual, archaeological, and historic resources. Performance standards often apply not to individual zoning districts but to the object being regulated or protected, wherever it exists.

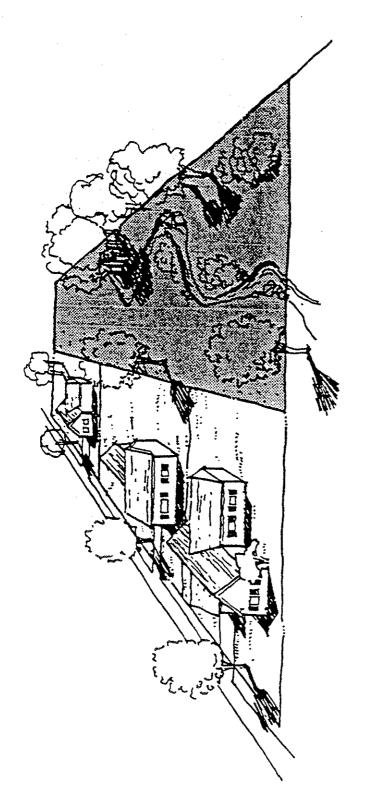
There are several types of performance standards that can be applied. The first type establishes an open space ratio for residential zoning districts and a landscape surface ratio for non-residential zoning districts or uses. These performance standards are illustrated in Figures 2 and 3. The table below provides an example of these district standards.

<u>Use</u>	Density	Space Ratio	Landscape Surface <u>Ratio</u>	Floor Area Ratio
Estate District Residential Other permitted use	.50	.30	<u>-</u> .60	.15
Suburban District Residential Other permitted use	2.50 s =	.25	. <b>4</b> 0	.30

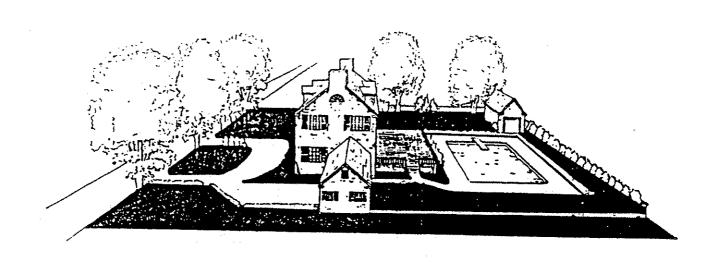
The second type of performance standards sets a specific protection level for natural resources. This type of performance standard is essentially an automatic overlay zone that protects as shown below:

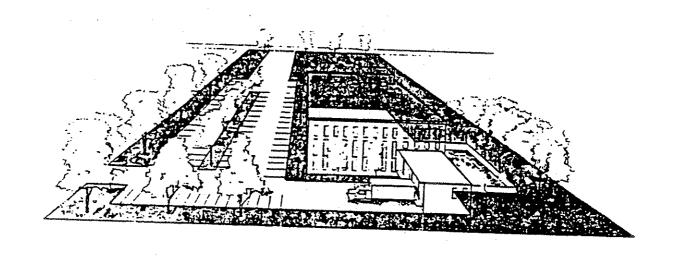
Natural Resources		Open Space Ratio
Floodplains		1.00
Lakes	4.1	1.00
Shore buffer		.85
Ridges		.90
Hardwood Hammock		.80
Forest, high quality		. 65
Forest, low quality		.40

Essentially, this approach can be applied to any resource whose destruction or pollution is reasonably well understood.



OPEN SPACE RATIO (OSR)





LANDSCAPE SURFACE RATIO (LSR)

A third type of performance standard applies not to a resource, but to an aspect of a natural cycle or function that is disrupted by development. While the identification of protection levels helps reduce impacts, in many cases, addressing the specific cycle and the interaction with development that creates a problem is the desirable route. (An example is storm water; this is an environmental problem that can be addressed with specific standards to retard peak flows or to reduce the pollutant loads carried by the resource.) A complex analysis is required in order to determine whether a site design meets a particular standard. Unfortunately, a developer may have to test a number of alternatives in order to find one that works.

Performance standards have a tremendous advantage in that they directly apply a district-wide open space ratio that ensures adequate open space. Performance standards also protect natural resources without resorting to procedural systems. Performance standards generally rely on clustering and landscaping to achieve community character and open space goals. The densities are designed to take into account the degree of clustering desired. Landscaping is another important feature of performance standards systems. This ensures that the desired community character is achieved both by setting a minimum open space and by ensuring landscaping in those areas where it is required to enhance the quality of the community and its open views. Landscaping can be used to create specific effects that enhance the feeling of openness in the community. It permits and encourages more dramatic clustering. It can be effectively used for a wide range of clustering to protect and preserve agriculture, preserve natural resources, or simply to ensure the character of development in the community. It can achieve any open space goal. In general, it is even more sensitive to the commodity value of the land than clustering. Performance zoning provides a mechanism whereby Davie can, in fact, balance the impacts of the regulations so that both the resources and the rights of property owners are respected. Performance zoning is efficient at balancing the two views of land because, to a significant extent, density can vary independently of the open space ratio. This means that the density on the buildable portion of the land can, in many cases, be increased to ensure that reductions in property values associated with the resource protection standards are minimal. The potential problems with deprivation of property rights and arbitrary and capricious standards disappear with the performance zoning approach.

#### Environmental Impact Statements

The National Environmental Policy Act of 1969 was passed as a result of strong environmental and resource protection concerns in the United States. With the sudden advent of a strong resource protection objective, the government found itself without adequate planning or regulatory techniques to deal with environmental goals.



Communities are now adopting resource protection elements modeled after the national environmental impact statement requirements. This requires developers to prepare a statement that assesses any impacts on the community's resources and to select the best course of action from several alternatives. The system is less a regulation of the land than a process for arriving at a decision. The process is ad hoc and requires the developer to collect a variety of data, test alternatives, and present the findings on the impact. Public hearings are held, and citizens and other interested parties are also permitted to submit evidence. elected officials must then sort through all the information and either accept, modify, or reject the statement.

The ultimate problem with this technique is that it is inconsistent in its long-term results. It not only has all the faults of conditional zoning but, because of the cost of preparing impact statements and the lack of standards, is also less consistent and more drawn out. The preparation costs for the developer can easily double or quadruple the cost of preparing a development review application. Citizen groups must hire attorneys and experts of their own to review the material. While it was originally envisioned that the elected officials would simply sit and listen, the complexity of the issues demands that the community hire its own staff with the technical expertise to sort through the complex and conflicting testimony that often arises.

#### Land Acquisition

Acquisition is one of the oldest methods of protecting a community's resources. Government has the right to acquire land either through negotiation or condemnation, provided there is a public purpose. Several methods of acquisition of land are available to government, including the purchase of fee simple interest, purchase and resale upon condition, purchase and lease back, acquisition subject to life estate, and acquisition of tax delinquent land. While all of these are valid techniques, they are used outside the regulatory process. There are also variations of acquisition in which the local government pays for easements or development rights which preserve the land in open space while leaving the land in private ownership which is appropriate for many open space applications and ususlaly requires less public funds than outright acquistion.

Open space may be actively used land where the public has full access, land on which development or uses are prohibited and land that provides amenity to the development in which it is located. Acquisition is appropriate for trails and parks. Open space used for the benefit of development residents or that provide the character of the development are not suitable for acquisition.

#### Conservation Easements

In ordinary situations, there is little difference in cost between the value of fee simple acquisition and the acquisition of an easement that takes all development value. A typical use is where an equestrian development is proposed and would for the easement approach have internal trails to hook into the Town's system. The Town may want access through that development to link elements of the Town's trail system. Easements would provide limited public. access and still retain open space.

A variation on the easement is what is known as a conservation easement. Conservation easements are useful where purchase of the easement would result in a large tax reduction to the landowner--an incentive to maintain a specific natural resource such as a hardwood hammock. One advantage of the conservation easement approach is that it can be tailored to individual properties on a case-by-case basis. It is possible for the City staff to design a property to protect visual, natural, and historic A plan could be worked out to give the landowner the maximum development value consistent with the preservation of the resources. Because it is a mutual effort, where both parties can benefit through good design, the costs may be reduced very substantially, and the easement is a means of negotiating this sort of thing.

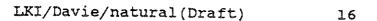
The Nature Conservancy located in Wachapretue, Virginia uses this technique. Libertyville Township, Illinois has also used this technique and even offers the landowners free land planning services.

# Transferable Development Rights

The concept of transferring development rights (TDRs) is based on the fact that ownership of property is a bundle of ownership rights that can be separately bought and sold. The fee simple ownership of property includes all these rights. The rights that can be separated from the bundle are mineral rights, development rights, hunting rights, logging rights, and scenic easements to name but a few.

TDRs essentially can take three forms. In one form, the rights of a property owner, who may own several parcels, can be transferred from one parcel to another. As a result, parcels most appropriate for development can receive an increase in density by limiting the development potential on other parcels where resources should be protected. The transfer does not permit an increase in overall density, it simply allows the location of all development potential on one or more parcels in return for leaving one or more parcels development-free.

In the second form, by sale or other agreements, several owners



may agree to a density transfer. Landowners may sell the right to develop their property to another landowner who can then build at an increased density elsewhere. The difference between this second form of TDR and the first is that a receptor district, where the development rights can be used to increase density, is required. There needs to be an area that is permitted to have increased densities and is capable of absorbing all the available development, if the landowner is to have a reasonable expectation of selling the development rights to builders.

One of the most important aspects of this method is ensuring that there is really a market for the commodity. This form of TDR is, as is the first, a voluntary system. Here, the landowner is given the option of development at restrictive densities or selling development rights.

The third form of TDR is mandatory; it requires landowners in a protection area to transfer their development rights in order to realize any development value from their property. In this case, the zoning mandates either no development or a very low level of development. As is the case with the second alternative TDR, there needs to be a receptor district which accommodates the development. Unlike the voluntary system, there also needs to be a carefully constructed balance between sender and receptor districts. There must be a market that absolutely ensures that all development rights can be used.

A mandatory TDR system will fail if there is insufficient land to accept all of the transferred rights. Since there is nothing forcing a landowner to purchase these rights, there needs to be a significant oversupply of receptor district land in comparison to the total number of development rights to be transferred. The mandatory nature of this third form of TDRs causes the TDR system to require much more careful design than the other two forms.

In Davie, the issue will be what is to be protected. Because there is so much open land today, there will have to be a balance between land to be protected and a market area large enough to purchase all the available development rights. This may mean preserving only 50-70% of the open space if a mandatory system is used. And, while the voluntary system is not market-dependent for its legal workings, its ultimate performance in achieving the desired goal is sensitive to the market.

The major advantage of the voluntary TDR system is that it can promote the preservation of some properties in an area that is too large to be preserved with a mandatory system. The voluntary approach encourages the preservation of large areas, and it provides some leverage for conservation groups who could protect more land if they could market development rights.

An exception to the market limitations of normal TDR systems is a

comprehensive TDR system. At this time, however, the comprehensive TDR system is relatively untested. The system was originally proposed in Maryland during the early 1970's as a reform to the entire zoning system. TDRs were, and still are, considered to be a device by which the "windfalls" and "wipeouts" that characterize zoning decisions can be mitigated. comprehensive TDR system goes farther to recognize that a large portion of the value of land is created by governmental investment--a fact noted by the U.S. Supreme Court in Penn-Central.

In a comprehensive TDR system, every property owner in the Town would be issued development rights. Each landowner would receive a share of the development potential of the Town projected for the next 20 to 30 years. The distribution of rights would be based on land holdings, and while Davie might have several subareas that could be used in the allocation process in order to recognize major differences in land value, they would be very coarse.

In a comprehensive TDR system, the actual land use pattern is separate and distinct from the zoning system. The development rights are fully transferable. A zoning change would not bring instant increases in land value, because one also needs to have development rights to actually build at any given density.

The advantage of a comprehensive TDR system is that it spreads the benefit of development to all landowners more evenly, and deemphasizes the role of a zoning change in establishing land values. It provides a mechanism for protecting sensitive land by selling development rights. In terms of pure growth management, the cost of building in one location or another would more accurately reflect the value of public investment and the cost of improving the site, rather than the value of the zoning district.

Although this system has some very attractive features, the fact that it is somewhat radical and relatively untested creates a liability. In addition, the allocation process would be expensive and complicated. Many property owners may end up with fractional development rights. Depending on the percentage of fractional rights in the system, free market assembly of development rights may be difficult. On the other hand, the system should be periodically updated, either every five to ten years or when 20 to 25 percent of the development rights have been used; therefore, it does not have to be tightly constrained economically as in other mandatory TDR systems.

An important reason for considering TDRs is that the U.S. Supreme Court continues to hear taking issue cases. The Court has given some broad invitations to communities to include such devices as a safeguard against a "taking." In MacDonald, Sommer, and Frates v. Yolo County, the Court required proof that "any proffered com-





pensation is not just" as a precondition to establishing a taking. Thus, building compensatory devices or alternative choices into an ordinance makes good sense.

#### ISSUES PAPER

# COMMUNITY CHARACTER



#### Introduction

What type of community is Davie and in what direction is it headed? Answers to these questions are two of the most critical aspects of the Town's planning. The Town's past planning policies have been directed at preserving the rural and open space qualities of the Town; likewise, their preservation is viewed as an essential element of this plan. The development pressures in southwestern Broward County will place tremendous stress on Davie's goals. If Davie is not to be submerged and lost as a unique part of the metropolitan area, then it needs new policies that better protect, preserve, and enhance its character.

The term "community character" covers a broad spectrum of concerns. First and foremost, community character is a visual concept; it is, however, more than just an aesthetic concern. It represents a comprehensive system of looking at the environment where land use, economic, social, life-style, and visual disciplines are integrated.

The community character system is based on the assumption that there are three basic types of communities: rural, suburban, and urban. There are different design rules for each, and they are directly related to land use, economic, social and lifestyle conditions. Many of these elements carry with them specific consequences that are unavoidable. The essential elements are interrelated, and it is not possible to mix and match the different character types without bringing all the elements into play. For years planners have looked at many of these elements as separate and unrelated. Broward County and its many conflicting land uses and other urban problems is typical of the results of artificial compartmentalization. Land use classes that pit suburban residential areas against encroaching urban uses are the typical result. This issues paper is intended to provide a system for evaluating Davie's existing character, assessing where it will go according to current policies, and then focusing on the role of open space in structuring Davie's ultimate character.

#### Davie

The Town of Davie is a rather unique community in Southeastern Florida. In an era of unprecedented, unfettered development, Davie has managed to retain much rural charm. Orange groves, farmland, and several important ridges are all concentrated in western Davie. These lands and areas developed in scattered one acre lots have



given Davie its reputation. The development pressure now poised on Davie's borders can destroy that character in five to ten years. Once gone, it cannot be retrieved. It is not too late to take significant steps to achieve the desired results.

Recognizing that Davie is but a small portion of Broward County, serious consideration should be given to the Town's role, both in relation to surrounding communities and the entire County, in formulating the Open Space Plan. Other than the Town's lower density noted in the Broward Land Use Plan, there has been little recognition that Davie is unique. The cities in Broward County are growing together into a Vast sprawling complex where residents or visitors can only distinguish one from another by road signs or maps. Davie can provide a very different character. Twenty to thirty years ago, regional planners were seeking ways to provide green corridors, fingers, or belts to structure the character of metropolitan areas. Davie can do what those planners failed to do: provide green space not only for the benefit of Davie's residents but also for the benefit of the entire County.

Historically, the Town was built on the farmlands and citrus orchards established on drained wetlands. Many residents in the area lived on one acre or larger lots and were involved in equestrian activities or agriculture. Despite rather traditional suburban development on the east end of town, this rural-equestrian-open space concept has taken hold of Davie.

# Community Character

There are four related components involved in describing community character. The first is a view of the large scale components of a community (such as type of land use and intensity of use) to determine the type of community. A second crucial factor is the community's scale. Both of these components view the community on a relatively "macro-scale" perspective. The third component is the relationship of people to buildings; this is the "micro-scale" end of the community character spectrum. A fourth aspect is the design of development and the degree to which it contributes to a cohesive community.

The theoretical elements of each component are described in this section as a prelude to the description of the community character policy elements of the Comprehensive Plan discussed later in this chapter.

The first perspective, type of community, is assessed using a view of community character based on the aesthetic and functional aspects of different communities. An objective system of analysis is applied to the existing land use pattern to determine the character that exists. The type of land uses, their density, and their distribution are measured. This type of visual character relates directly to the life-style that is expected and experienced by

most residents and visitors to the community.

The second perspective, community scale, also relates back to the type of life-style expected in a community. Community scale is basically a size issue. The dynamics of human life in a community change with scale just as does the visual nature of the community.

Micro-scale issues define the relationship between a person and a building or space. While this is also a size issue, its orientation to the individual rather than its relationship to community functions results in very different concerns. The impact of an individual building is felt at this level.

The impact of the design of a building or group of buildings on the community is a subjective issue. Architectural qualities such as harmony, contrast, texture, and roof-lines are all vitally important, but represent a difficult task in terms of achieving a community consensus as to what is good.

#### Community Character Type

There are three basic types of community character: urban, suburban, and rural. These three types of character can be further divided. For Davie, the urban category is subdivided into urban and auto-urban; the suburban category is subdivided into suburban and suburban estate; and the rural category contains countryside and rural subtypes. The following list describes each of these subtypes.

#### 1. Urban

The urban community character type most closely resembles the classic urban environment where buildings define and enclose spaces. The spaces are architectural and often function beautifully with little or no vegetation. The ground is likely to be paved. The urban environment is designed to bring people into close contact and to maximize personal interaction. Congestion is desirable in commercial areas, in that it provides the needed interactions for successful commerce. Privacy is typically obtained in the interior spaces formed by small, walled courtyards or fenced yards. The skyline is architectural and is defined by the roof-lines of the surrounding buildings. There are not any good examples of nonresidential urban areas in Davie, but Las Olas Boulevard in Ft. Lauderdale is a good example as is the central area of Boca Raton. The highrise coastal condominiums are urban residential areas.

#### 2. Auto-urban

Auto-urban is a category that has developed where urban uses are designed to be accessed by automobile. They are, in fact,



urban places transferred to the suburban fringe of cities. The impact of roads and parking areas for automobiles are the driving forces that determine the character of this type of environment. While they are clearly urban in use, economic function and scale, the dominance of the automobile has left such areas with little or no attractive features. Missing are the well-defined enclosures and human scale of classical urban design. The degree of enclosure cannot focus and direct human activities as is the case in an urban environment. However, the degree of enclosure is high enough so that feelings of suburban spaciousness, lack of congestion, and privacy are impossible. The buildings are widely spaced, because the parking and circulation take up more land than the buildings, which tends to destroy any sense of place. These conditions are further aggravated by parking lots and roadways in the spaces between buildings.

The retail, office and industrial uses all function in this type of environment. The intensities, while they are often lower than in the urban category, are not limited to those intensities except by land economics. The need to have high levels of interaction and move the needed employees and shoppers in and out of such areas means that congestion is almost unavoidable. Strip commercial areas along Davie Road, Griffin and University Drive are all examples of auto-urban character. The much more intensive office development at University Drive south of Griffin is also auto-urban in character but exhibits a higher density.

#### 3. Suburban

This type of character is vastly different from urban types of character. Suburban communities have sufficient open space between or within developments to provide needed contrast and balance to the buildings. The spaces are more accurately open spaces because they have lost their architectural quality; instead, the open spaces present a garden-type or natural appearance. Historically, the open spaces that provided suburbs with their character were simply vacant lands that had not yet been developed. For this reason, they are referred to as "borrowed space." Natural open spaces or views are borrowed from adjoining land. Unfortunately, as most suburbs develop, they move from a suburban character to an urban character, because these spaces are lost to development.

In suburban areas, human interaction is generally lowered from the intense commercial level to the social level, and individual privacy is greatly enhanced. While total privacy does not occur on the suburban lot, a substantial sense of privacy is maintained. Changes in lifestyle and interaction levels have profound implications for land use and economics. The level of interaction needed for commercial uses cannot be

be spread out, or the commercial uses must be spread out, or the commercial uses must be surrounded by open space. The change in density of these uses is such that only more essential services to these areas will locate there, and economically the land is not as valuable as it is in urban areas for these uses.

There is a balance between the man-made and open space elements of the community; yet, in suburban areas, no matter how much care is taken in design, the visual resources of the community will not be preserved. Buildings are simply too close together.

The most recent one acre subdivisions in Davie are suburban, because large homes with three car garages have been built on open land. The size of the homes and type of landscaping used cause little space to be left between homes—there is privacy but not the near isolation and preservation of abundant natural features that are required in order for the development to fit into the rural category. Older areas such as Hiatus Isles also have a similar character. Dense developments, such as the Estates of Alpine Woods, are able to provide a feeling of suburban character, because they borrow open space from the surrounding vacant land.

# 4. Suburban Estate

Suburban Estate development represents the lowest intensity end of the suburban portion of the character scale. Here, individual properties are large enough and landscaped sufficiently to provide an extensive open feeling, and there can be less reliance on borrowed land to promote this open feeling. In general, open spaces have a slight dominance over man-made components. The lots are large enough so that privacy is secured without resorting to fences. The ability to borrow vast areas of space from neighboring agricultural areas makes residential lots that are nominally suburban in scale enjoy only because these lots take advantage of enormous and unrestricted open space nearby—should that land ever be developed, these residential areas would revert to their true suburban character.

Most of the old one acre developments in Davie presently have a potential to be suburban estate in character. An area such as Southwest 61st Avenue south of Griffin has this character because of the combination of modest homes, one acre lots and large trees. But, without the essential landscaping features, large homes in open areas can end up being suburban in character. All too often, homeowners have planted a few scattered trees in their lawn then concentrated on foundation plantings. Developments with this type of landscaping must rely on

surrounding open space in order to provide an estate character. Once this open space is developed, however, the character will revert to suburban. Unfortunately, most of the areas from which such developments borrow open space are also being developed. In order to prevent potential changes in character, developments should not be allowed to depend on heavy borrowing of open space.

#### 5. Countryside

Space dominates rural character types; in the countryside character type, the environment is a landscape. Countryside is the only one of the rural characters that contains exurban development to any degree. The ability to accommodate any significant development without destroying the landscape qualities of this district is clearly a difficult balancing task. In open land, the buildings are highly visible and very low intensities are needed to preserve a countryside character.

Most of the land in a countryside area must either remain in agriculture or continue in a natural state. Since a country-side area must evoke the qualities of a landscape, it can, and should, be considered a composition. The clearing of land, and the creation of edges, spaces, or screens to provide interest and variety, are essential elements of this composition. Residential development must occur at the densities associated with countryside character; this development must enhance the character of the area through sensitive site design that results in the creation of a balanced composition.

For the most part, this type of character is transitory in nature. Most of western Davie presently has a countryside character, but it is only because most of it is undeveloped. If the land develops as presently zoned, this pattern will eventually result in a suburban character. Thus, preserving this type of character requires very significant action on the part of Davie.

#### 6. Rural

This character type is just what its name implies—the character common to agricultural or natural areas. In a rural community, development is limited to the rural ecology: barns, homes, and other buildings needed to produce agricultural products. There are no places in Davie where this type of character has not been disturbed by some form of suburban intrusion over a large area. It is too late to attempt to retain this sort of character except as an isolated example of rural character.

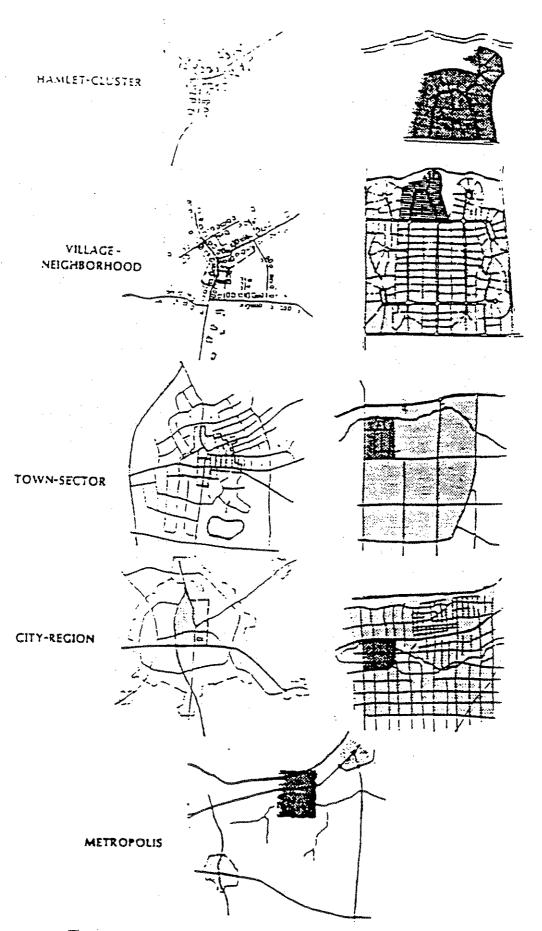
#### Community Scale

Human communities exist on different scales. There are places where the scale of settlement is very small and the human element is significant—allowing one to quickly traverse the area on foot in a minute or two. At the other end of the spectrum are ultralarge metropolitan places where the individual is minute in comparison to the whole, and where an hour or more of auto travel may be needed to traverse the community.

Classifying areas by scale is an important element in defining community character. Although the classes carry titles that relate to free-standing communities, the larger units are often made up of smaller units. The major points along the community character scale are illustrated in Figure 1 and discussed in the text that follows.

# Pigure 1

# COMMUNITY SCALE



#### 1. Cluster or Hamlet

A cluster or hamlet is a very small grouping of buildings ranging from three or four, up to perhaps as many as sixty individual structures. While the hamlet clearly refers to a totally free-standing community, the cluster is the building block for larger community units. The cluster may be any of the urban or suburban character types with the possibility of neighboring areas being of a different character. The hamlet is likely to be a small node of urban character set in a rural landscape. It represents an interesting element of design for the fringes of metropolitan areas, where intense clustering may achieve a more rural character than lower density conventional subdivisions. In each case, no more than two minutes of normal walking should be needed to traverse these small-scaled areas, and the scale of the buildings will have to reflect the character of the area. The cluster is almost inevitably residential. A hamlet is likely to be the commercial focus of a larger area to which it provides services.

### Neighborhood or Village

A neighborhood or village is a real social unit capable of supporting non-residential uses. Each is large enough to sustain substantial social and economic interaction, and each has a number of small social units functioning within its boundaries. Walking through a neighborhood or village might take as long as five or ten minutes. Both of these types of areas are large enough to support nonresidential activities which serve only the immediate area. Like the hamlet and cluster, the village and neighborhood are distinguished by whether they occur as an isolated settlement or as a component of a larger settlement area. The village, like the hamlet, represents an interesting design element for use in suburban areas to provide greater areas of open space and a more rural character. Seaside, in Walton County, Florida represents the first of a number of efforts to use this concept.

#### 3. Town or Suburb

A town or suburb is composed of groups of neighborhoods and is large enough to support a considerable diversity of non-residential activity. In a metropolitan setting, a town needs to do things to distinguish itself from its neighbors. Otherwise, it will become just another community within the larger suburban matrix. This represents a major problem in Davie, since the communities in Broward County often have a street as a common boundary.

#### 4. City or Region

The city or region is a large community. Davie must find a role for itself in the metro Broward area.

#### 5. Metropolis

The metropolis represents the far end of the community size scale. In south Florida, it extends from Miami to West Palm Beach and from the Atlantic Ocean to the Everglades.

There are two types of problems associated community scale. The first, the unwitting destruction of a community's scale, does not affect Davie, since its boundaries are set. The second problem is simply recognizing the structure of each element in a community, so that each of the units has an identity or character that gives its residents a feeling of being something other than a street in the South Florida megapolis. The preservation of the character of each of these units is a critical design element. While Davie has successfully identified itself as a community, it still needs to do so at the neighborhood or cluster level.

Furthermore, like people, distinct communities must have a separation between them. It is too late to preserve Davie as a free-standing community; it is and will continue to be a part of the suburban fabric of Broward County.

There is a major design opportunity at the small scale of hamlets and villages. They can be successfully used both to create a special sense of place and identity and to alter the character of the area at a give density. Decisions remain to be made regarding this design option that are crucial to the ultimate character of Davie. These decisions will not be easy, because the available techniques for preserving community scale may be controversial. The amount of controversy depends upon how determined a community is in preserving its scale.

There is a strong interaction between the type of community character and the scale aspects of a community. A factor known as the "paradox of clustering" is critically important. Clustering creates space; thus, the dense hamlet or village is, in part, dependent upon the space around it for its character. That space permits a community which contains significant urban areas to retain the image of a small rural community. In other words, the rural character of a hamlet is tied more closely to surrounding vacant land and its small size than it is to the intensity of use within its borders.

It is too late to isolate or surround Davie with open space. However, the largely countryside character of western Davie can either be suburbanized or preserved. The use of clustering and the paradox of clustering to greatly influence the total open space

preserved and, thus, the ultimate character of Davie, must be considered.



#### Micro-Scale

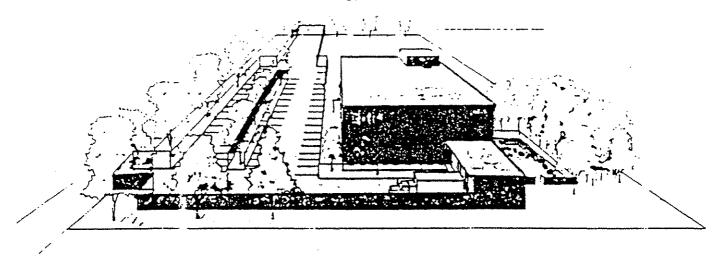
The micro-scale concept deals with how a building or space relates both to its inhabitants and to other buildings or spaces. Scale, by its very nature, is subject to quantification, at least on a relative basis. There are several methods for measuring scale. Some relate the building or space to human beings, others relate buildings or spaces to each other, and still others relate the building to its land.

Some of these concepts apply primarily to urban design. One of these is a scale measure that relates buildings to the human being and buildings to each other. A measure known as D/H (distance/height) is used to relate spaces to the surrounding buildings.

The critical issue in rural and suburban environments is the relationship between buildings and the land on which they sit. Basically, building volume ratio (BVR) is the volume of buildings divided by the area of the site. The building volume ratio measures the total built environment and accounts for the volumes of parking areas, loading areas, and accessory structures as well as the volume of the building. Its use is illustrated in Figure 2.



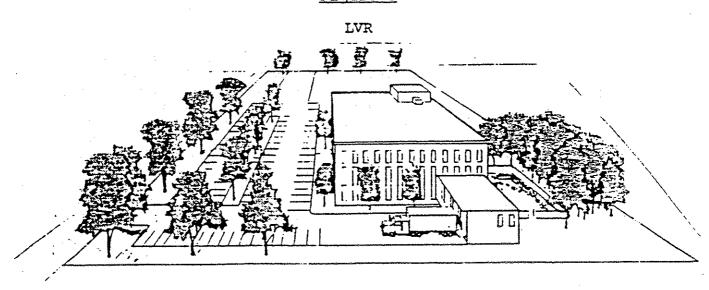
#### Figure 2



## BUILDING VOLUME RATIO (BVR)

Building volume ratios should be used in conjunction with landscape volume ratios. Especially in Davie, this concept is extremely important to the micro-scale concept. Landscape volume ratio (LVR) is basically the landscape volume divided by the site area. It provides a method of measuring the effect of landscaping bulk, in much the same way building volume ratio measures the bulk of the built environment, by accounting for the area occupied by landscaping, its density, and the height of the plant material. The area and height of new plantings are based on the estimated size of plant material five years after installation. A five year grow-in period is used to better assess the overall impact of newly planted landscape materials. This is illustrated in Figure 3.

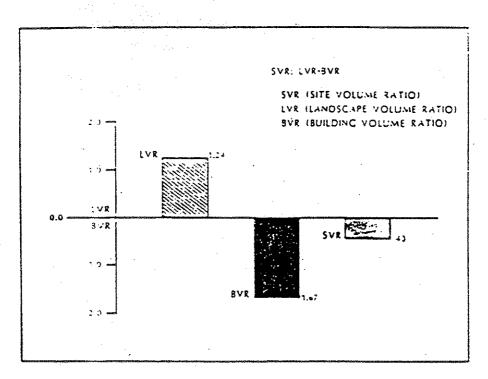
#### Figure 3



# LANDSCAPE VOLUME RATIO (LVR)

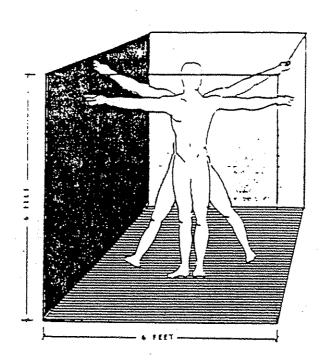
The site volume ratio (SVR) is a site summation that describes the relationship between building volume ratio and landscape volume ratio. The site volume ratio is calculated by subtracting the building volume ratio from the landscape volume ratio. Site volume ratios can be either positive, meaning the volume of landscape is greater than the building volume, or negative, meaning the building volume is the larger of the two volumes. These values can be conveniently displayed on a chart as shown in Figure 4.





SITE VOLUME RATIO (SVR)

Another measure devised for micro-scale analysis is one that compares the volume occupied by a human to that of the buildings or spaces involved. The volume occupied by a human corresponds to Leonardo DaVinci's well-used illustration and results in a volume of 216 cubic feet (see Figure 5). This volume can be used as a measure of the mass or volume of structures in terms of their relation to human scale and in terms of a specific, quantifiable means of measuring a building's scale in relation to the others in the neighborhood. Thus, if a 1,000 square foot home has a volume of 12,000 cubic feet (20' by 50' by 12' high), it then has a value of 55.5 scale units (12,000 cubic feet divided by 216 cubic feet) when compared to our human-based volume.



216 CUBIC FEET

SCALE RATIO

BASIC VOLUME UNIT

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Figure 6, on the following page, depicts a number of structures as examples of what different human volume values might look like. The critical use of this tool is not necessarily to set a specific maximum or minimum building mass for the community, but rather to provide a technique for determining whether or not the proposed building fits into the existing character in terms of its microscale.

# Figure 6

# SCALE RATIO

20

432 sq.ft. 4,320 cu.ft. 216 cu.ft.

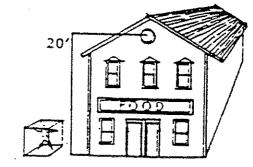
52

131

864 sq.ft. 11,232 cu.ft.

216 cu.ft.

111

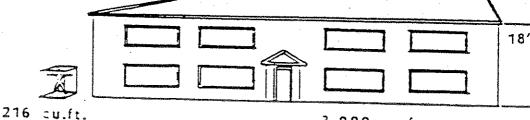


216 cu.ft.

1,200 sq.ft.

24,000 cu.ft.

250



3,000 sq.ft.

54,000 cu.ft.

O 1987 Lane Kendig, 1 c.

Out-of-charaster building scale is becoming a problem in Davie. The scale of newer residential structures is much greater than the older buildings. The old one story ranches must now confront two story buildings. The site volume ratios of some of the newer buildings indicate that sites are being overwhelmed by buildings. Although barns and farm complexes have very large structures, they tend to be set on as much as 100 acres; therefore, they have low site volume ratios. The impact of large farm buildings is further softened, because farm structures are considered as integral parts of the rural environment rather than as foreign objects. A subdivision in a rural environment, in many cases, does seem quite foreign.

In suburban environments, buildings with large, out-of-scale masses alter the character of a neighborhood. The buildings may not increase the density of the area, and they may even have the same architectural style used in the area, but they will still be out-of-context and foreign. As buildings get larger, they begin to create a sense of enclosure; this is an urban attribute that is destructive to suburban and rural characters.

A building's architecture can also have an effect on scale. Two-story buildings with steeply pitched roofs beginning at the second floor eaves emphasize the size of the structure. Other architectural details can help mask the size of structures. Thus, mass itself is a concern, as is also architectural style.

In general, a community may have occasional buildings that are out-of-scale with the remainder of the community, but they should be buildings of importance to the general public so that their difference has a symbolic meaning.

#### Design

The design of individual structures can be divided into a whole range of perspectives. For example, the degree of contrast between buildings can range from no contrast (i.e., monotony) to total contrast (i.e., discord). Although harmony is a goal, individual buildings within a neighborhood should have enough contrast to ensure interest, but dramatic contrast should be limited to a building that has a significantly different function. A school or church in a residential area could contrast sharply, but residential units or multifamily structures should not. A Town Hall or a post office could contrast with downtown commercial uses, but the degree of contrast among commercial structures should be kept within limits.

Contrast can occur on a number of different levels such as color, scale, orientation, signs, landscape, texture, materials, and architectural style. Yet, there also needs to be a number of common threads in order to make a community design work. Davie's

western theme must be protected and enhanced. One building that contrasts too sharply can destroy the appearance of a whole street section. Regulations need to provide for the review of projects to ensure that the character of an area is maintained or improved.

Attention must be given to the design details that contribute to Davie's character. Architectural elements can create problems if they are ignored. Elements such as street furniture, lighting, and signs, are all critical to maintaining a community's character. While these elements may be viewed as being frills, they are essential ingredients in the creation of quality urban environments.

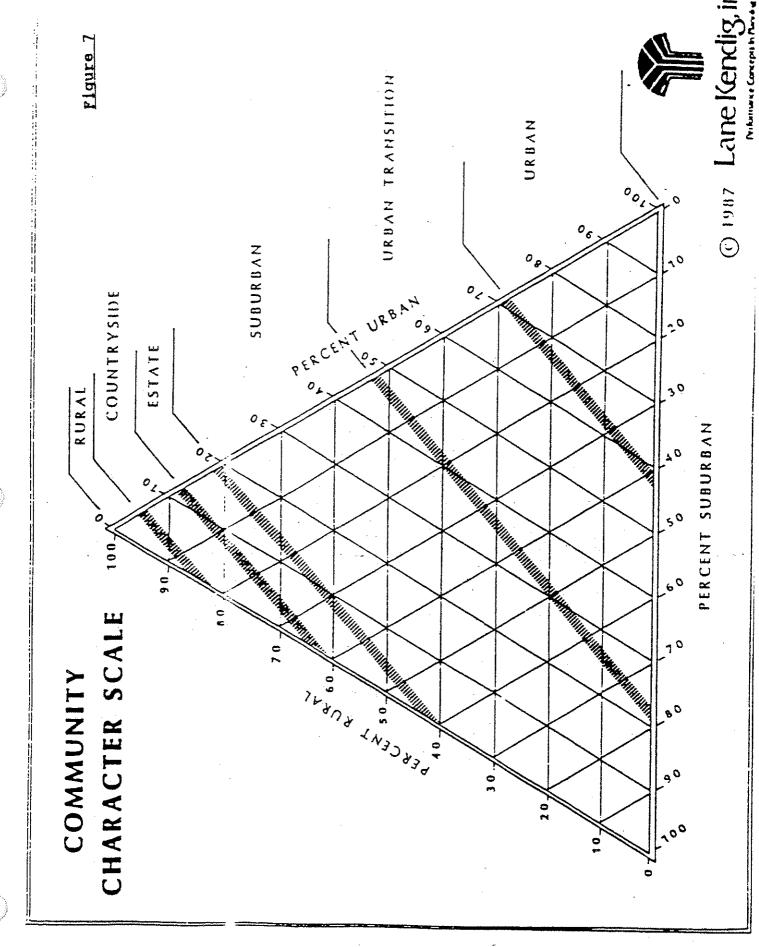
Vegetation is also important. While vegetation should not be ignored in urban town environments, it becomes increasingly important in small towns and villages. In commercial areas, trees can be used as decoration, or to focus attention on particular aspects of a space, or to provide shade. In residential areas, vegetation is a critical humanizing element.

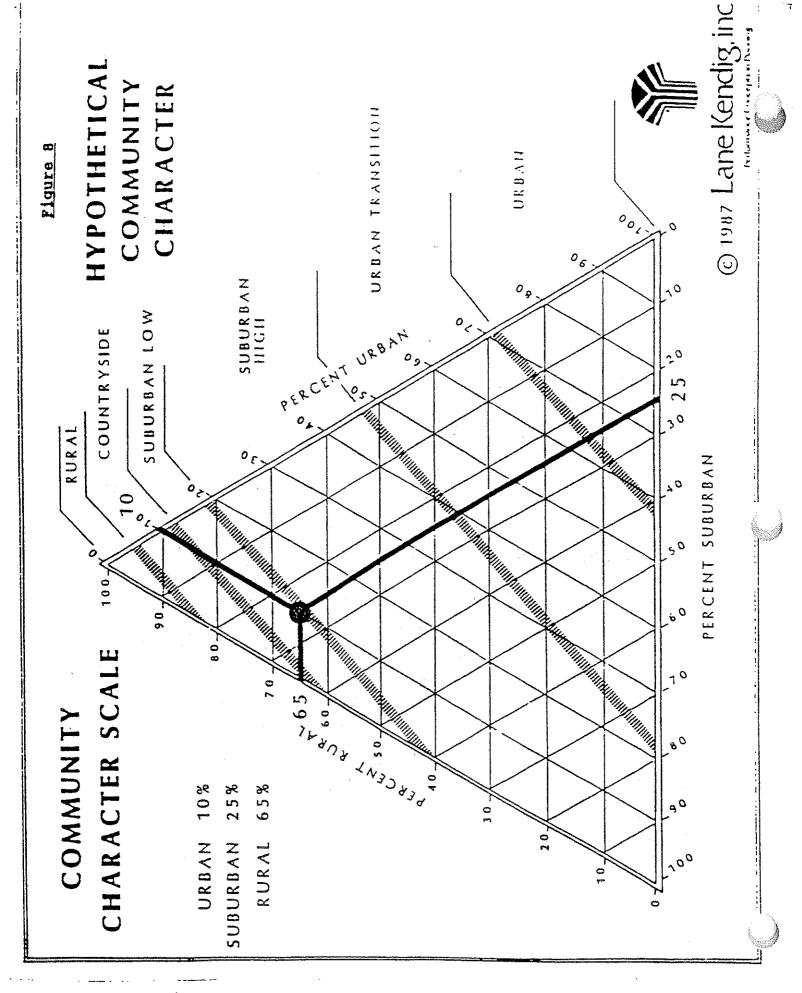
#### Davie's Character

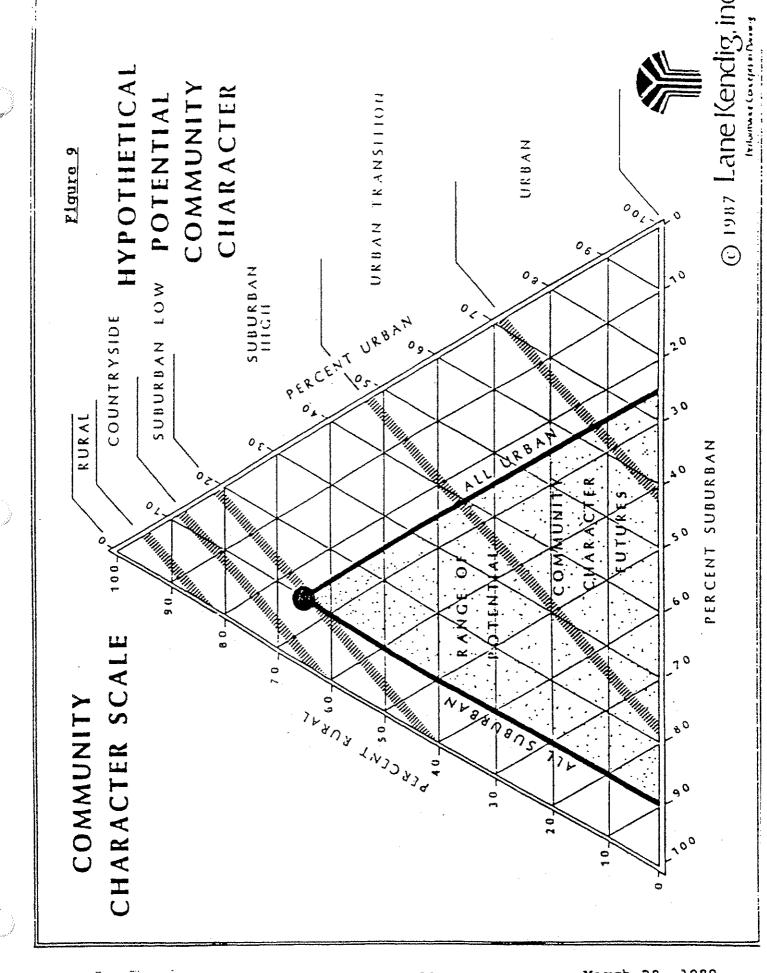
The Community Character Scale is an objective means of illustrating many of the points that have been made earlier about the character of Davie. The Community Character Scale is a graph upon which the percentages of three different components can be plotted, as shown in Figure 7. Each corner of the diagram represents the point at which the area is all a single character. The scales along each side of the triangle permit easy plotting of the percentage of any one of the three types of character. The six types of community character selected for Davie divide the triangle into six character areas.

In order to use the community character scale, the percentage of an area that is urban, suburban, and rural must be known. Figure 8 depicts a hypothetical area that is 65 percent rural, 25 percent suburban, and 10 percent urban.

The community character scale is useful both to plot existing character and to predict possible future character. Since in most instances, rural is assumed to be vacant, developable land, all possible futures lie below the existing character point as shown in Figure 9. If all future development is suburban, then the future proceeds along a line parallel to the left-hand side of the community character scale. Urban development proceeds parallel to the right-hand side of the triangle. Any land to remain rural would create a limit to possible changes in character.







OF DAVIE, BROWARD COUNTY, FLORIDA, OPEN SPACE COMMITTEE

ARCHAEOLOGICAL: CULTURAL HISTORICAL SECTION

#### INTRODUCTION

- The City of Davie possesses a number of distinctive and unique prehistoric and historic period landmarks. Indeed, within the corporate boundaries of this municipality liest some of the most historically significant and relatively intact archaeological sites presently known in South Florida.
- chaeological sites located in Davie are found (to date, solving in ecological sites located in Davie are found (to date, solving in ecological zones characterized by elevations considerably higher than surrounding landforms. They are respectively the prominent, marine formed remnant sand dune or barrier reef that runs through portions of southwest Davie, known as Pine Island including a western extension (known in recent times as Spooners, Ridge). This ridge with elevations up to 29 feet above sea level formed a series of upland islands. The second location where archaeological sites have been found are in small tree hammorks scattered throughout Davie. These too were formerly islands in a general wetland ecosystem which preceded major land reclamation projects in the late 1800"s.

  APPENDIX IV-3C

Vehile an intensive, systematic survey and controlled excavations were beyond the scope of this project, sites presently known and recorded with the State of Florida's Division of Archives attest to archaeological sites on Pine Island, its western extensions and small hardwood tree hammocks within the corporate boundaries of Davie. It is most likely that more archaeological sites will be found in these ecologically distinct zones should intensive surveys be conducted.

By way of a brief background, M.R. Harrington first brought our attention to the historical significance of Pine Island with test excavations in 1909 on "Long Key". Three decades later, W. C. Orchard (1938) of Broward County conducted excavations. While the pioneer efforts of these men are recognized, no reliable information to pinpoint the location of these sites exits. That is, excavations may have been on Pine Island or on a more westerly island hammock. It is primarily since 1974, through the work of the archaeologist Robert Carr, that most of the archaeological sites on Pine Island are known (1986). The Broward County Archaeological Society has also contributed to this data base with several preliminary excavations of other sites in the city of Davie.

The historic period, primarily of Pine Island, has been researched by Patsy West (1983) a longtime friend and student of the Seminoles and Cooper Kirk, (1977) historian. Both are members of the Broward County Historical Commission and have documented

the history of this area. Indeed, this is truly a most important area historically. To those interested in the early history of southeastern Florida and Broward County specifically, Pine Island figured prominently in the Second Seminole Indian Wars (1835-1842) as well as providing refuge for the Seminole, preceding and following the military encounters in 1838 and 1841.

To those interested in the prehistory of southeast Florida, the cultural subarea was defined as the Tequesta by Goggin (1947) and more recently redefined and called the Everglades culture area (Carr and Beriault: 1984). At the time of Spanish contact, well adapted hunting, fishing and gathering groups called the Tequesta lived and camped on these island hammocks and elsewhere in the Everglades.

None reason that the archaeological sites in the area are so significant is that the cultural history spans several thousand years. This area is unique in that both the Seminole Indians recent past as well as occupations going into the prehistoric periods, perhaps as early as the Middle Archaic Period, (3000 B.C.) can be found in close proximity. The Peace Camp site (8Bd00052) in western Davie revealed an Archaic level dated 3050 B.P. +/-140 (Mowers and Williams: 1972). From its historical and archaeological importance few places in Florida compare. The temporal and cultural periods that are present suggesting its significance are as follows:

#### Occupations of the Recent Historic Period,

20th Century: Former Seminole Reservation; One quarter quartersection of Section 20, T. 50 S., R 41 E. was reserved for Seminole land by Executive Order June 28, 1911. Long key had two
quarter quarter-sections reserved. It was as recent as 1934,
that the Federal Exchange Act mandated that lands included in the
earlier Executive Order of 1911 be exchanged for what is now the
northern perimeter of the Dania Reservation. Several first hand
accounts verify Seminole Villages on Pine Island in 1898. Many of
these household heads surnames can be linked to prominent
families among the Seminole and Mikasoukee today. West comments
that "Pine Island is the largest and most prominent Florida
Seminole site in existence in southeast Florida" (Carr: 1986, 31).

#### Occupations of the Early Historic Period,

Seminole Period: Students of U.S military history have long been introjged by the Seminole Wars. Pine Island was the final safe haven for retreating Seminole and Mikasuki under the leadership of legendary Apeika (Sam Jones), who traversed the Everglades from the northern shores of Lake Okeechobee. The U.S. Army engagment and ultimate route of Apeika in March, 1838 with 600 troops penetrating Pine Island from Fort Lauderdale is recounted by Kirk (1977). While the precise location of this skirmish has not been established, it is likely that it took place on the northern end of Pine Island (Carr, 1986).

# Sites with Seminole Period components on Pine Island.

Site No. Name

Condition of Preservation

8Bd00096 (Pine Island 3),

8Bd01112 (Pine Island Landing),

8Bd01114 (Pine Island Ridge),

Unknown

8Bd01115 (Charlie Willeys Island),

Well Preserved

8Bd01119 (Ranch Ridge),

Good to Excellent

8Bd00098 (Pine Island Seminole Village).

# Historic/Prehistoric Period: Tequesta, Glades and Archaic Cultures.

known archaeological sites in the city of Davie cover an extremely long period of time ranging from the historic Tequesta dated from Glades IIIc Period (A.D. 1513 - A.D. 1700) through Glades I and II Periods, beginning as early as 500 B.C. As previously noted, the earlier Archaic Period is also present in this area. Furthermore, some of the known sites are relatively undisturbed and provide excellent examples of adaptation by the original inhabitants to a unique environmental niche of south Florida over considerable time. While most prehistoric sites are on Pine Island, habitation and camp sites are found elsewhere within the corporate boundaries.

Sites with the Historic Tequesta and Prehistoric Glades Cultures/

Site No.	Name	Condition of Preservation
88400095	(Pine Island 2)	Minimally disturbed (10%)
88d00096	(Pine Island 3)	
8Bd01113	(East Midden)	Minimally disturbed
8Bd01118	(Low Tree Midden)	Fair to Good
8Bd01119	(Ranch Ridge)	Excellent
8Bd01114	(Pine Island Ridge)	Unknown
8Bd01117	(West Ridge)	"Probably among best pres-
		erved sites in Broward
		County" Carr.
8Bd01116	(Hamlet Midden)	Poor condition
88400097	(Pine Island #4)	Disturbed
	(In Tree Top Park)	

# Sites Outside of Pine Island Ridge/ Tree Island Hammocks:

8Bd00108 (Spooner's Ridge)

8Bd00100 (Large Oak Site)

Disturbed with intact components

8Bd00076 (Chaplin Nursery Site)

Badly disturbed

8Bd00052 (Peace Camp)

Disturbed, extent unknown

## Summary of Archaeological Site Information:

A total of twelve (12) archaeological sites have been recorded for Pine Island. On the basis of limited tests and surveys \$1 x (6) sites have both Seminole and prehistoric period components. Seven (7) prehistoric midden sites cover a wide time range. Four (4) additional sites are located on ridges to the west of Pine Island ridge and on small hardwood tree hammocks. These are primarily prehistoric, one possessing an Archaic Period component (8Bd00052).

Sites vary in terms of the degree of disturbance but many are well preserved middens showing only partial damage.

## Cultural Resource Management Recommendations:

1. The greatest priority should be given to acquiring Pine Island Ridge in order to preserve as green space a unique portion of south Florida's culture history. No other area in South Florida is blessed with both historic and prehistoric sites so undisturbed covering such a broad range of Florida's past. The Pine. Island ridge could provide a unique setting, complete with nature trails and historical signs documenting the numerous sites and events while development is confined to areas adjacent to but off the ridge. From the standpoint of national, state, county and community history the historical significance of the entire ridge is considerable. Efforts should be made to incorporate ex-





Seminole Indian occupation as well as military encounters. At tifacts recovered from the Seminole sites and prehistoric period sites should be displayed to provide a thoughtful and educational experience for visitors. I am confident it would be a great source of pride for all residents of Davie and especially for the many Seminole residing in south Florida.

- 2. The western extension of the ridge, Spooner Ridge and west beyond Flamingo Rd. is also a high probability area for archaeological sites. A systematic archaeological survey should be conducted before further development takes place. Known sites, such as Spooners Ridge site and Chaplin Nursery sites should be assessed for additional disturbance since initially recorded. In the event that additional sites are encountered, mitigation plans should be implemented to preserve them.
- 3. Scattered Hardwood Tree Hammocks: There is a high probability that more sites will be found within hardwood tree hammocks scattered throughout the city. These sites would also form a unique place in the culture history of south florida due to their environmental setting. It is recommended that they be subjected to archaeological survey and monitoring prior to any development. One site, 8Bd00052 (Peace Camp), is important and efforts should be made to preserve it. This is due in no small part to it being one of the few Archaic Period sites in Broward County. The Large

Oak site (8Bd00100) should also be studied further. Small park areas would be consistent with preservation goals in these situations.

The above conclusions are similar to those offered by Robert Carr for Pine Island (1986). Suggestions for a partial preservation plan is less desireable but in the event that total preservatio of Pine Island ridge would not prove feasible, the following is suggested. Areas were ranked as to their archaeological and historical significance. The extent of site damage was also considered.

- 1. The area in which sites 8Bd01113, 8Bd01115, 8Bd01117, 8Bd01119 are located were given the highest priority.
- 2. Sites 8Bd01114, 8Bd01118 and 8Bd01116 and the immediate vicinity should be subjected to scientific excavations prior to any development taking place. On site monitoring is also recommended.
- 3. A systematic survey of the Pine Island ridge outside of Section 20 (where Robert Carr restricted his survey). This should be followed by on site monitoring if development projects are initiated.





Comments Regarding Methodoloy On Which This Report Was Based:

Florida State Archaeological Site Files were examined for known and recorded sites in Davie corporate limits. Historical sources in the FAU library were also examined. This was followed by a meeting with Robert Carr in Miami. Both infrared and low altitude aerial photographs were used to identify sites and key areas for this study. Two days were spent in the field establishing "ground truth" of our analysis. Special attention was given to the present condition of each site as compared to photographs taken April, 1987. Following this all recorded sites were plotted on the low altitude section maps.

Report Prepared By: Wm. Jerald Kennedy, Ph. D.

Consultant, Society of Professional Archaeologists

Date: December 14,1988

# BOTANICAL ANALYSIS OF THE TOWN OF DAVIE BROWARD COUNTY, FLORIDA

The open spaces of the Town of Davie have been inventoried with respect to their vegetation. Each open space, three acres or greater, was examined and categorized (if applicable) as to plant community, major plant species, previous treatment and use.

Most of the dry land within the corporate limits was created when the general area was drained in the first half of this century. Because of this, most of the present vegetation is not indemic except on the centrally located elevated Ridge area (Pine Island) and on the eastern most located wetland along State Road 84.

Below are the Identification Codes and their explanations that are used in the computerized Open Space Inventorization.

OPEN SPACE CODING (See Separate Species List For Ridge)

ID Code	<u>Name</u>	
Ap Bp Bw Cb Pm Cm Co Cr Ct Ct Cy Da Ho Df Dr Pr Ex	Australian Pine Brazilian Pepper Borrow Pit Cabbage Palm Cemetary Cocoplum Citrus Cattail Cypress Dahoon Holly Dog Fennel Dry Prairie Exotics	DEC 27 1998
Gr La O Li O Ln Ma	Grasses Laurel Oak Live Oak Lawn Red Maple	TOWN OF TAXABLE

Melaleuca Ml Ms Mastic Od Pa Old Pasture Pa Pasture (Active) Park Pk Pl Fd Playing Field Po Ae Pond Apple RB Red Bay R Pm Royal Palm Scarified Field Sď Sr Fg Strangler Fig Sw Ba Sweet Bay Wi Willow Wet Prairie Wt Pr Wx Mt Wax Myrtle

### SP. LIST (Species List For Ridge)

Because of the great number of plant species residing only on the Ridge, a separate list of them is presented below.

### Common Name

### African Tulip Tree Australian Pine (2 species) Avocado --Beauty Berry Bamboo Bottle Brush Brazilian Pepper Broom Grass Cabbage Palm Sabal Palm Cabbage Palm Fern Caesar's Weed Cardinal Air Plant Castor Bean Cattail Comelina Citrus Coco Plum Elderberry Ficus Fiddlewood Greenbriar Guava Gumbo-limbo. Jacaranda . Laurel Oak

### Scientific Name

Spathodea campanulata Casuarina equisitifolia Casuarina glauca

Callicarpa Americana
Lasiacis divaricata
Callistemon sp.
Shinus terebinthifolius
Andropogon sp.
Sabal palmetto
Sabal palmetto
Phlebodium aureum
Urena lobata
Tillandsia fasciculata
Ricinus communis
Typha latifolia
Comelina sp.

Chrysobalnus icaco
Sambucus simpsonii
Ficus Benjamina
Citharexylum fruticosum
Smilax laurifolia
Psidium guajava
Bursera simaruba
Jacaranda filicifolia
Ouercus laurifolia

Leather Fern Life Plant Live Oak Loquat Mahoe Marlberry Mastic Ground Plum Moon Vine Muscadine Grape Myrsine Orchid Tree Pigeon Plum Poison Ivy Pokeberry Pond Apple Fern Red Bay Red Mulberry Resurection Fern Rosary Pea Royal Palm Royal Ponciana Satinleaf Saw Palmetto Sida Slash Pine

Snowberry
Spanish Moss
Spanish Needles
Strangler Fig
Surinam Cherry
Swamp Fern
Sweet Bay
Tabebuia

Trema
Turks Cap
Umbrella Tree
Virginia Creeper
Wax Myrtle
White Stopper
Wild Coffee
Wild Lime
Willow
Woman's Tongue
Zamia

Acrostichum danaeaefolium
Bryophyllum pinnatrum
Quercus virginiana
Eriobotrya japonica
Hibiscus tileaceus
Ardisia solanacea
Mastichodendron foetidissimum
Momordica charantia
Ipomea alba
Vitis rotundifolia
Myrsine guianensis
Bauhinia variegata
Coccoloba diversifolia
Toxicodendron radicans

Anona glabra Pteridium aquilinum Persea borbonia Morus rubra Polypodium polypodioides Abrus precatorius Roystonea regia Ponciana regia Chrysophyllum olivaeforme Serenoa repens -Sida sp Pinus elliottii var. densa Chiococca alba Tillandsia usneoides Bidens pilosa Ficus aurea Eugenia uniflora Blechnum serrulatum Magnolia virginiana Tabebuia serratifolia Thelypteris kunthis Trema micranthra Hibiscus sp. Schefflera actinophylla Parthenocissus quinquefolia Myrica cerifera Eugenia axillaris Psychotria nervosa Zanthoxylum fagara Salix caroliniana Sanseviera Thysifolia Zamia pumila

### PINE ISLAND RIDGE

### Introduction

Pine Island Ridge is a unique elongated terrain formation that rises from eight to twenty feet above sea level. Its elevation, large numerous trees, and attendant native vegetation cause the Ridge to dominate the surrounding land area.

### Location, Shape and Size

Pine Island Ridge lies mostly within the corporate limits of the Town of Davie, Broward County, Florida. Its length within the Town of Davie approximates 4.7 miles. More specifically, it is located in Sections 17, 18, 19, 20, 29 and 30 of Township 50 - Range 41 and in Sections 23, 24, 25 and 26 of Township 50 - Range 40.

The Ridge is narrow (300 - 600 ft. in width), and serpentine with portions being disjunct. One major arm runs generally east-west and a second major arm runs north-south. These two arms of the Ridge connect in S20-T50 - R 41. At the point of juncture of the two major arms a short southerly extension of the north-south arm terminates in a county park known as Tree Tops Park. Most of the western-half of the east-west running arm of the Ridge is separated from the greater formation by approximately one mile of low flat terrain.

### Soil\*

Pomello Series: Typically, the surface is dark gray, fine sand about 5 inches thick. The subsurface layer is 33 inches of fine sand. The upper 3 inches is light gray and the lower 30 inches is white.

Pomello fine sand: This is a nearly level to gently sloping, deep, moderately well drained, sandy soil that has a layer well coated with organic matter at a depth of 30 to 50 inches.

\*Soil Survey of Broward County, Florida - Eastern Part.
United States Department of Agriculture Soil
Conservation Service 1980.

### Ecological Description

The relatively high Ridge presents a strikingly different ecology from the surrounding low plain. Huge ancient oaks cover major portions and are the dominant canopy species. They produce the biotic portion of the environment that governs the growth conditions of all the other flora.

There are two species of oak (Live Oak and Laurel Oak) that create over ninety percent of the vegetational canopy. Very large Slash Pine infiltrate the oak in some areas. The understory is a composite of mostly: Red Bay, Mastic, Pigeon Plum, Red Mulberry, White Stopper Strangler Fig and Cabbage Palm.

The shrub layer is composed of mostly: Wild Coffee, Saw Palmetto, Beauty Berry, Satinleaf, Snowberry, Wild Lime and Marlberry. Vines make up an important part of the total flora.



Some of the more numerous species are: Greenbriar, Muscadine Grape, Moon Vine, Poison Ivy, Rosary Pea, and Virginia Creeper.

The ground cover is made up of a diverse spectrum of plants, ranging from creeping woody shrubs to herbs. Representative species are: Boston Fern, Swamp Fern (mid-sorus fern), Caesar's Weed, Comelina, Life Plant, Ground Plum, Pteridium (Fern), Sida, and Spanish Needles.

The dominant oaks, themselves, provide habitats for a number of epiphytic species (air plants) whose individuals literally cover many of the large branches. The major species of epiphytes are: Resurection Fern, Cabbage Palm Fern, Cardinal Air Plant, Spanish Moss, Tillandsia recurvata and a wild orchid (Encyclia tampensis).

Portions of the Ridge vary in disturbance depending upon the intensity of man's incursions. Some areas seem untouched and contain a minimum of exotic (non-native) plant species while other portions may be either denuded of understory vegetation, leaving only the great oaks, or contain a proliferation of exotic species that have successfully out-competed native species.

### <u>Evaluation</u>

Pine Island Ridge is a unique geological/ecological formation which occurs nowhere else in southern Florida. Similar abrupt elevation changes (ridges) of this height are usually accompanied by a very dry ecology known as Scrub Vegetation. The soil of these other ridges in southern Florida are usually made up of a

very dry poor soil known as sugar sand. However, the soil comprising the Ridge is listed as Pomello fine sand which has a greater fertility and water holding capacity. Also, the Ridge's narrowness and isolation have effectively protected it from major fires that would have prevented the long time survival of the oaks.

The environmental factors that impinge upon the Ridge have fostered a plant community characterized as hammock vegetation which is a mixture of tropical (Amazonian) and temperate (North American) species.

There are isolated patches of hammock vegetation in southern Florida yet one of them duplicate the exact environmental (geological/ecological) factors of the Ridge, its vegetation and the age of its numerous oaks.

The dominating landscape features of the Ridge, as represented by its height and narrowness and the beauty of its vegetation, make it a natural resource of significant importance to the biology of southern Florida.

### Uses

The Ridge, as a unique natural resource, offers significant potential for passive and active recreational pursuits for the citizens of Davie. Suggested uses are: Picnicking grounds in the more open and more accessible areas, horse trails and walking paths, jogging trails and aerobic exercise stations, self guided nature trails emphasizing identified flora and Ridge ecology, nature center and observation tower.

### WETLANDS OF DAVIE



### Introduction

The Wetlands is a combination of valuable fresh-water swamp and marsh lands that are now rarely extant except in areas protected by governmental and certain private agencies. Its plant species are largely sub-tropical to tropical in origin.

### Location, Shape and Size

The Wetlands lies within the extreme northeastern corporate limits of the Town of Davie, Broward County, Florida. It is roughly isodiametric in shape. More specifically, it is located in Sections 19 and 20 of Township 50, Range 42. State Road 84 runs southeast-northwest through the northern one-sixth of the area. The roadway thus forms the northern boundary of the major portion of the wetlands. Davie's town limits form the western boundary, and the South New River Canal forms most of the eastern and the southern boundary.

### Soil\*

The soils that underlie the Wetlands of Davie consist of two types:

Lauderhill muck -- The Lauderhill series consists of nearly level, very poorly drained soils in broad flats in the Everglades. These soils formed in hydrophytic plant remains mixed with a small amount of mineral material. Under natural conditions these soils are covered with water most of the year. Most of the acreage of



this soil is in natural vegetation that consists of sawgrass.

Plantation muck — The Plantation series consists of nearly level, very poorly drained soils in broad flats along the eastern edge of the Everglades. These soils formed in unconsolidated marine sediments — a muck surface layer (overlies) a sandy mineral material. Most areas of this soil are in natural vegetation.

\*Soil Survey of Broward County Florida - Eastern Part.
United States Department of Agriculture Soil
Conservation Service 1980.

### Ecological Description

The Wetlands is divided into two major plant communities: swamp and marsh-wet prairie. The terrain of both areas is extremely flat with an elevation of approximately two feet.

The swamp occupies generally the eastern one-half of the area and covers the entire shore line of the South New River Canal along the Davie town limits. The greater fertility of the soil of this eastern half and intrusions of minor water passages into the swamp (flowing water) have fostered the dense growth of native tree species. Pond Apple, Cypress, Strangler Fig and Willow dominate the vegetational complex.

Fresh water and migrating game fish reside here. Additionally, tropical and subtropical aquatic birds of the Heron and Egret genera feed and rest here. The protected Osprey also lives in this swamp.



The western marsh-wet prairie supports a radically different ecology. In this area Cypress and Melaleuca trees, though dominant, are scattered enough to form an open type of growth.

Sawgrass and other marsh/prairie grasses and broad leaved annuals make up the ground cover. The sparser growth of this western portion of the Wetlands is due to the lesser fertility and slightly drier condition of the soil coupled with periodic burning. The periodic burning of the marsh-wet prairie kills off most of the swamp bush and tree species (exceptions: cypress and melaleuca) and allows the more rapidly growing sawgrass and marsh-wet prairie annuals to regenerate.

Animals indiginous to the marsh-wet prairie are red-winged and marsh hawks, raccoons, oppossums, fox, armadillos and various aquatically oriented snakes and turtles.

### Evaluations

The Wetlands of Davie represent a fast disappearing natural resource in the eastern part of southern Florida. It is valuable not only for its innate beauty but for the part it plays in the overall environmental picture of the general area. Swamps and marshes provide habitats and food chain bases for numerous birds, reptiles, mammals and fish. Additionally, they temper the climate and act as pollution sinks for air and water born contaminants.

### Preservation and Uses

The Wetlands of Davie is a valuable, environmentally sensitive natural resource and should be considered a preserve area. It should be managed as such by professional biologists (foresters) using the latest techniques for the eradication of non-native plant species in the total Wetlands and periodic localized burning in its western portion.

Though the total Wetlands should be considered a preserve, it is recommended that this valuable environment be enjoyed and also used for educational purposes by the citizens of Davie.

Construction of elevated wooden walk-ways at varying heights through the more interesting parts of the swamp and marsh-wet prairie would provide the valuable recreational and educational opportunities these ecologies contain.

### TOWN OF DAVIE, FLORIDA

### NARRATIVE FOR AGRICULTURAL LAND USE INVENTORY

Thomas F. Kelsey, Ph.D. BCI Geonetics, Inc.

Agricultural Land Use Change in Davie

All agricultural land use depicted on Colored Infrafed High Altitude Photos (CIR-HAP) from March 1984 were compared with 1987 tax map aerial photos. In turn, these were compared with actual ground-level observation of all existing agricultural land uses within Davie as of November 29, 1988. All land currently in agriculture has been mapped (see Map \_\_\_). Agricultural land use was placed into the following categories: Pasture (Pa), which includes dairy cows, beef cattle, and horses; Citrus (AG-CIT); Plant nurseries (AG-pn), which includes field nurseries, greenhouses and shade houses; winter vegetables (AG-wv); Horse training (AG-ht), which includes horse boarding); and Agricultural research (AG-rch) which is the University of Florida IFAS Research Station.

### Citrus

The acreage devoted to commercial citrus groves is declining rapidly. The most notable example of this is the complete replacement of nearly a square mile of citrus by an upscale development, Forest Ridge. The overall physical condition of the majority of active groves can be described as old with declining yields, dying trees, and, in some cases, apparent abandonment. There are a few minor exceptions where some trees have been replaced and interplanted with palms and other tropical ornamentals. One is struck by the proliferation of "For Sale" signs on so many of the grove properties. In all probability, the total acreage mapped as citrus is exaggerated because in some cases the grove has already been sold, maintenance and production activities have recently ceased, and the grove is awaiting conversion to residential development.

Without the assistance of some type of preservation program, the groves are definitely destined to be replaced by non-agricultural land uses, especially residential developments. Even with some type of preservation program, there are a number of factors beyond the bounds of Davie which make continued citrus production highly problemattical. Most likely, the balance has already been tipped whereby improvement of groves is not economically viable.

There is a direct water resource conflict between citrus groves and residential development. Citrus groves which were developed long before the current residential development have

traditionally been irrigated by manipulating the level of the groundwater table, holding water levels high in the canal system when it was necessary to irrigate. For residential development, canal levels are maintained at lower levels as a flood protection measure. When the balance of citrus groves versus residential development swings in favor of residential development and, therefore, canal levels are held lower than they were formerly, the trees in the remaining groves cannot adjust to the lowered levels and many, in fact, have died.

There are two general factors which discourage the continuation of citrus production in Davie: the prohibitive cost of reconditioning the groves (new plantings, undertree minimum volume irrigation systems) and lack of a reliable labor supply. Rather than investing in the grove improvements, it makes much more economic sense to sell the grove acreage for residential development, take the revenue from that sale and purchase land much further away from the urban/rural interface and develop new groves from raw land. This eliminates the conflict of new residents and old grove operations (often resulting in nuisance suits against the grove operations).

It is not just Davie that is experiencing a decline in citrus groves. On the contrary, frost-damaged orange grove property in Central Florida is sold for \$12,000 to \$20,000 per acre for residential development. In turn, the proceeds from that sale are used to purchase large tracts of land at \$2,000 to \$3,000 per acre further south, develop an efficient water management system (drainage and low volume irrigation) and plant new trees (another \$2,000 per acre) and, in four years come into production far removed from the urban/rural interface. Like Central Florida, citrus acreage is also declining throughout Broward, Palm Beach and Martin counties. Hendry and Collier are the counties experiencing the greatest citrus grove acreage increase from this situation.

The labor supply required for harvesting the fruit is rapidly dwindling. The average age for the seasonal fruit picker is now approaching 45 years. Job alternatives, legal and illegal, have siphoned off the labor force. Those foreign fruit pickers who have recently obtained permanent worker status under the amnesty program of the U.S. Immigration and Naturalization Service, upon receiving their new status, immediately seek employment in other economic activities. Furthermore, the younger laborers who formerly would have replaced the older ones can now find jobs in the many service industries which have developed to serve the exploding residential population.



### Pastures

Pasture, like citrus agreage, is rapidly being converted to residential and other urban land uses. The reasons for this are very similar to those for citrus. The scope of this effort has not permitted extensive interviewing of property owners to identify the precise motives for maintaining land in pasture. Even so, it should be recognized that there are multiple reasons for the existence of pastures in Davie. Among them are the following: (1) pasture for functioning dairy enterprises; (2) land held in speculation for urban development, being grazed by beef cattle to qualify for a significantly lower property tax assessment under Florida's Green Belt Law; (3) pasture for horses bred and used for recreational and show purposes; (4) some combination of these three.

The conversion is dramatically demonstrated by the very rapid development of former pasture north of S.W. 14th Street in the far northwest corner of Davie, of the west side of Interstate 75 between Griffin and Sheridan Street, and of that area south of SR 84, west of Nob Hill Rd. into residential uses and commercial uses.

### Plant Nurseries

While plant nurseries of varying sizes and types can be found dispersed throughout Davie, many are concentrated south of Griffin Road, between University Drive and Florida's Turnpike. Like the citrus groves, one is struck by the number of "For Sale" signs on the wholesale plant nurseries, often accompanied by words such as "suitable for commercial development", "for residential development", etc., clearly indicating that the property will go out of its current use. Again, like citrus and pasture, urban development pressure and the conflict of increasing urban uses surrounding what used to be rural wholesale nurseries contributes to the shifting of this agricultural activity to other locations outside of Davie.

One activity which will postpone (but probably not ultimately prevent) the conversion process is fueled, ironically, by the land use transition itself. As residential and commercial development occurs on former agricultural lands within and around Davie, there is a substantial demand created for landscape materials (palms, shrubs, hardwoods, etc.). It is possible to plant new citrus trees in those areas of the groves where older trees have been removed and, in the spaces between the citrus seedlings, plant landscape material. The landscape materials produce a revenue stream while the citrus is maturing. Then, as the citrus tree develops a larger crown and begins to yield fruit, the landscape material is sold off and either not replaced

or replaced by low growing materials in line with the trunks of the citrus trees. The degree to which this is occurring is small when compared to areas going out of citrus completely to make way for urban development.

### Winter Vegetables

The very small area devoted to winter vegetables and strawberries is not likely to be replaced by urban activities. This land is located directly beneath the high voltage transmission lines which traverse the area on an east-west axis between Griffin Road and Stirling Road, east of University Drive. The production is limited in scale and appears to be marketed through a retail produce and garden center adjacent to the fields. In addition to the winter vegetables and strawberries, this space beneath the transmission lines is shared by plant nursuries which also are not threatened by residential and commercial development. By the same token, since this area comprises a very long, narrow strip perpendicular to the north-south streets which carry local traffic through the area, it does little in the way of contributing to the rustic appearance of Davie.

Observations on the "Country" or "Rustic" Appearance of Davie

By looking at the High Altitude Color Infrafed Photos of Davie and surrounding area taken in 1984 and then driving on nearly every street of Davie in late November 1988, one can easily see and feel the "country" nature of Davie. However, with the exception of limited unincorpated areas of Broward County along Griffin Road, one can also see that while Davie stands out as an island of agricultural activities in a sea of urban development, that island is shrinking and changing rapidly. The new, planned community of Weston on Davie's western limits represents a classic "leap frogging" of urban sprawl past an area where the desire of many is to maintain an appearance and atmosphere of rural life. This, coupled with the replacement of pastures, citrus groves, and plant nurseries with housing and commercial development within Davie, represents a real threat to the current atmosphere and "quality of life" of Davie.

Davie is faced with a typical population growth dilemma which will result in the conversion of agricultural lands into urban land uses. A substantial portion of Davie still has the appearance of openness because of the extensive pastures, citrus groves and plant nurseries. Several of the older residential areas are large-lot, single-family homes, many with lots large enough to have horses and other animals. In some cases, it is evident that homes were built in the midst of functioning citrus groves without completely removing the groves. Driving past the

open fields and citrus groves, through large-lot subdivisions on narrow streets where Australian pines have formed tunnels, past the "Old West" style of architecture of Davie municipal facilities and commercial properties, and past a rodeo arena, one indeed receives the feeling of being in a place very different from the urban sprawl of neighboring communities.

To many, the present ambiance has become a very attractive setting for a place to live and work. To accommodate the demand for housing and services for those who would like to move to Davie, land now used for the very uses which create the feeling of openness and "country" must be converted to housing and other non-agricultural uses. New developments with names such as Country Estates, Country Pines, Country Villas are built. Initially, a selling point to purchase a dwelling unit in such a development is that, quite often, one can literally see "country" out of the window and drive through "country" to and from one's residence. Obviously, what will happen in due time is that the more people who must be accommodated, the very land which has created the atmosphere will be occupied by residential and commercial developments, thus destoying the very essence of that which has created a desireable living environment in the first place.

### Agricultural Lands for Open Space Preservation

If at all possible in terms of cost, find a way to maintain "agricultural open-space corridors" on long stretches of local roads which currently front on contiguous agricultural activities to maintain the appearance and thereby maintain a feeling of "country". Two areas that come to mind: (1) north side of Orange Drive (land currently in pasture might be converted to citrus/land scape material mix); (2) both sides of Flamingo Road (land currently in groves, mixed grove/landscape, some pasture — Flamingo Gardens, a portion of the ridge with its laurel oaks). Neither of these roads are major carriers of through traffic. This, combined with existing "country", large-lot subdivisions (encourage more of these, with narrow streets planted with large crown hardwoods, if possible, instead of Australian pine) The large-lot residences would include citrus trees and horses).

The preservation program would be, in reality, a program to subsidize whatever agricultural activity (or activities) deemed appropriate for the purpose of providing the appearance of a "country" feeling. Furthermore, this would have to be coordinated and integrated with traffic element. At the present time a coflict would exist if the Town desired to create an agricultural corridor along Flamingo Road because there are already plans to widen Flamingo Road such that it will carry more through traffic.

A RESOLUTION OF THE TOWN OF DAVIE, FLORIDA, DELINEATING AN AREA FOR CONSIDERATION IN THE OPEN SPACE PROGRAM: STATING THE TOWN COUNCIL'S INTENT TO PRESERVE THE RURAL CHARACTERISTICS OF THIS AREA

WHEREAS, the Town Council of the Town of Lavie has identified the need for a permanent Open Space Program to preserve the unique lafestyle of the Town and to facilitate the acquisition of passive and recreational open space; and

WHEREAS, the objectives of the Open Space Program include the protection of unique natural areas, enhancement of the quality of life in Davie, and preservation of the non-untarized area of the Town from development pressures; and

WHEREAS, it has been determined that the Open Space Program is essential to the Town's effects to preserve the unique rural characteristics of the Town and direct growth to areas of the Town capable of accommodating such development; and

WHEREAS, it is essential for the success of the Open Space Program to provide for the acculation of certain property within the Town and the transfer of development potential to appropriate areas.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF DAVIE, FLORIDA:

SECTION 1. That the Town Council of the Town of Davie declares that the estate area generally located east of Interstate 75, west of Pine Island Road, south of Southwest 14 Street and north of Orange Drive is preserved for consideration in the Open Space Program.

SECTION 2. That it is the policy of the Town Council to preserve and protect the rural characteristics of the area described in Section 1 above.

SECTION-B This resolution shall take effect immediately upon its bassage and approval by the Mayor. PASSED THIS 169 DAY OF testing 1987

Mayor/Councilman

Attest:

own Clerk

Approved this me cay of he worker 1987

APPENDIX IV - 4.

# **OPEN SPACE PROGRAM**

TOWN OF DAVIE
JUNE 3, 1987

### **OPEN SPACE**

**PURPOSE:** To establish a permanent Open Space Program to preserve the uniqueness of the Town of Davie and to facilitate the acquisition of passive and recreational open space in the Town.

OBJECTIVE: To preserve the quality of life in the non-urbanized portion of Davie and resist the encroachment of development in low density areas. The Open Space Program will provide better planning by providing a network linking areas of open land and avoiding the piecemeal development that the Town has historically experienced. The Open Space Program will provide positive action in response to development activity.

TIMETABLE: Open Space will be an ongoing multi-year program.

- I. What is Open Space? Open space is a large undeveloped area that currently may have various passive uses such as citrus grove, agriculture, forestry, or similar use. The Open Space Program will blend these land uses with uses such a bike paths, horse trails, hiking trails, etc. weaving them into a free-flowing linear network of open space. It is a valuable amenity that enhances the quality of life in Davie. The need for park and recreational facilities for active uses is unquestioned and ever increasing. The Open Space Program is an effort to provide passive and dispersed recreational activities for our community while preserving the country, open air atmosphere which makes Davie so unique.
- 2. What are the Benefits of Open Space? The open space program can, through market impact, increase the value of low density residential parcels. Proximity to large open areas may make these types of property particularly desirable places to live. Open space programs can help preserve agriculture in this community which is now declining at an alarming rate. Planned areas of open space can decrease the traffic impact caused by rapid development and be planned to allow the provision of municipal services more efficiently and effectively.
- 3. Why should Davie consider an Open Space Program now? Davie still has ample open land and time to plan. Timing is critical. Davie must act now to soften the impact of Interstate 595 and increasing development pressures in the Town. The Town must act to properly utilize its land resources, plan for the future and preserve the atmosphere for which Davie is known.
- 4. Is Davie able to afford an Open Space Program? The physical layout of the Town allows Davie to undertake such a program over a period of time. The eastern portion of the Town of Davie has ample industrial and commercial development and a strong tax base to sustain the cost of services for the Town without utilizing the low density areas to the west for development.
- 5. How is open space acquired? How much is it going to cost the taxpayers of the Town? There are a number of ways of acquiring open space. The proposals for acquisition do not involve any significant impact on the tax structure of the Town:

a) Purchase of Development Rights. PDR is used primarily to preserve agriculture. In this program, a government entity purchases the development rights to the land, not the actual property. Continued use for agriculture is allowed, but the property is not available for development. This method can be most useful in preserving Davie's

farms and orange groves.

- b) Transfer of Development Rights. TDR programs can be developed to provide open space by transferring the dwelling units from proposed open space land to other parcels. TRD requires careful planning and controls.
- c) Small Increment Bond Program. This is a limited bond issue to acquire open space areas that have been optioned by the Town. Growth increments in the Town's tax base and impact fees can be used to finance this project.
- d) Open Space Impact Fees. This is a method to assess large projects to finance open space and mitigate the impact of development in the Town.
- 6. Who owns the Open Space? The Town of Davie will own the open space in perpetual trust.
- 7. How will open space impact Davie's overall density? Davie's overall density will decrease as a result of open space programs.

Summary: Open space will provide an amenity and a development control in addition to being a significant planning tool.

FOR FURTHER INFORMATION:

Irving Rosenbaum Town Administrator Town of Davie (305) 584-I809

# OPEN SPACE PROGRAM POTENTIAL FUNDING SOURCES

# FLORIDA DEPARTMENT OF NATURAL RESOURCES

# LAND AND WATER CONSERVATION FUND PROGRAM (LWCF)

The Land and Water Conservation Fund Program is a Federal Grant Program administered by the Florida Department of Natural Resources and is an excellent source of acquisition money for resource-based outdoor recreation programs and facilities. The matching formula is 50% federal funds and 50% applicant funds. The acceptable forms of matching may include the following:

Cash - general appropriations Bonds Donated land value In-kind services.

The application period is from November 1 to December 31 each year. Review is completed by FDNR, recommendations for funding are approved by the Florida Governor and Cabinet, with final approval by the National Park Service. The time frame for completion of project acquisition is up to two years and the project must be developed within five years. The project must remain a public recreation facility for a minimum of twenty-five years.

Current year's funding level --\$1,170,025. Cap of Grant Award -- \$150,000

# FLORIDA RECREATION DEVELOPMENT ASSISTANCE PROGRAM (FRDAP)

The Florida Recreation Development Assistance Program is a State Grant Program administered by the Florida DNR. It is an excellent source of development money for outdoor recreation programs and facilities and may also be a source of site acquisition money. The matching formula is as follows:

Resource-based: Two state dollars to one applicant dollar and may be used for facilities dependent upon natural resources such as:

nature trails and study areas
picnic areas
boat ramps
wood playgrounds
fishing piers
horseback riding trails
hiking trails
recreational biking trails within outdoor recreation sites.

<u>User-oriented:</u> One state dollar to two applicant dollars and may be use for facilities which can be placed at the convenience of the user such as:

swimming pools tennis courts playgrounds (non-wood) Open Space Program
Potential Funding Sources
Page Two

shuffieboard courts
basketball courts
golf courses
handball and racquetball courts
tootball and soccer fields
physical fitness courses.

Combination of above uses: One state dollar to two applicant dollars and may combine resource-based and user-oriented facilities.

Uses may also include support facilities such as lighting, restrooms, and parking in conjunction with submitted project -- but not community centers or museums.

The forms of match may include:

Cash
Bonds
Undeveloped land
In-kind services
Florida Boating Improvement Funds

The application period is from September 1 to October 31 each year. Review is by the DNR with final approval by the Governor and Cabinet. The time frame for completion of a project is up to two years. Projects where land is leased must remain in public use for a minimum of twenty-five years and projects where land is owned must remain in the public trust for outdoor recreation uses in perpetuity.

Bonus Points can be awarded in evaluation for those projects which have statewide significance such as:

Historic Preservation.

<u>Conservation and Recreation Lands Program (CARL)</u>.

Florida Recreation Trails Program.

State Park System.

Natural Areas Inventory.

The previous year's funding level -- \$2.1 million Cap of Grant Award - \$150,000.

## FLORIDA RECREATION TRAILS PROGRAM

Chapter 260 of the Florida Statutes created the Florida Recreation Trails Program in 1979. The purpose was to establish a network of recreational trails for non-motorized entities such as bicyles, hikers, horseback riders, canoeists, etc. The Florida Department of Natural Resources serves as the administrator of this program. No specific grant money is available through this program because FRDAP funds can be used for this purpose. The department is able to provide technical assistance to local governments and volunteer groups such as the Florida Trails Association and is now writing the development and maintenance standards for the various types of trails, establishing an idea resource library with trail plans from across the state, and will review local plans for suggestions. The department depends heavily upon volunteer groups and local governments for the construction and maintenance of "dispersed recreation" facilities. Mary Ann Twyford is the contact person at DNR for further information. (904-487-4784)



# BROWARD COUNTY AND THE FLORIDA DEPARTMENT OF NATURAL RESOURCES

### FLORIDA ROATING IMPROVEMENT PROGRAM (FBIP)

Funds collected by the State of Florida Department of Natural Resources from pleasure craft vessel registration fees are deposited into the Florida Motorboat Revolving Trust Fund. A portion of these dollars is used to fund the Aquatic Weed Program and Manatee Protection and Recovery Program. The remainder of these funds is returned to the counties for boating improvement programs based upon the number of pleasure crafts registered within each county for the preceding fiscal year. It is up to the individual counties whether or not to apply for these funds and whether or not to share these funds with their local municipalities.

Broward County does share these funds. Application must be made through the county to the DNR for all allocations. A resolution by the County Commission supported with specific project information must accompany the application and request for funds. The matching formula may be structured as desired by the individual county and may vary from project to project.

Current Statewide allocation:

\$2,300,000.

Broward County allocation:

\$ 224,593.

Funds may accumulate -- Current runds available in Broward:

\$ 857,896.

Uses for BIP Funds include:

- New boat ramps and dock facilities.

Support services such as restrooms, lighting, paving, utilities and access roads for new and existing ramps.

Renovation of existing boat ramp and dock facilities or additions to existing boat ramp and dock facilities.

Shoreline stabilization, riprap, seawalls, signs and navigation lights.

May not be used for picnic facilities.

Grants may be applied for at any time. No opening and closing dates exist.

### CONSERVATION AND RECREATION LAND PROGRAM (CARL)

This is a state grant program to assist in the acquisition of lands which contain unique and irreplaceable ecological, historical and archeological resources and which provide significant wildlife management benefits as well as the opportunity for public recreational opportunities.

The Town of Davie and Broward County have submitted a Joint Application for CARL Grant money for the Pine Island Ridge Site. Chapter 259 of the Florida Statutes establishes the CARL Selection

Open Space Program
Potential Funding Sources
Page Four



Committee and Chapter 253.023 defines the CARL program and funding sources. The primary source of funding is the phosphate severance tax and up to \$40,000,000, may be designated annually for this grant program. There is no cap on individual project funding.

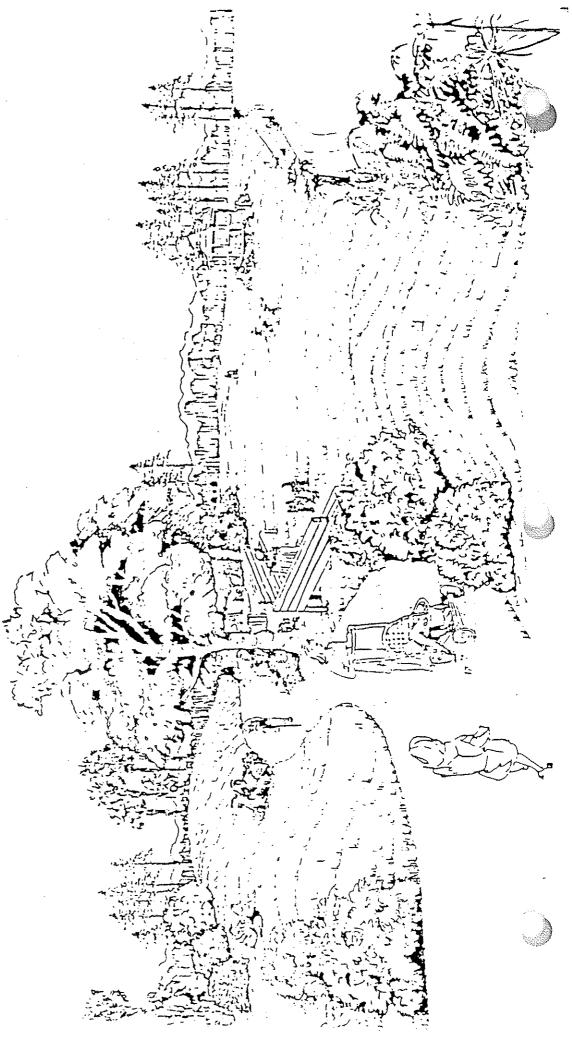
Statewide allocation: \$38-39,000,000.

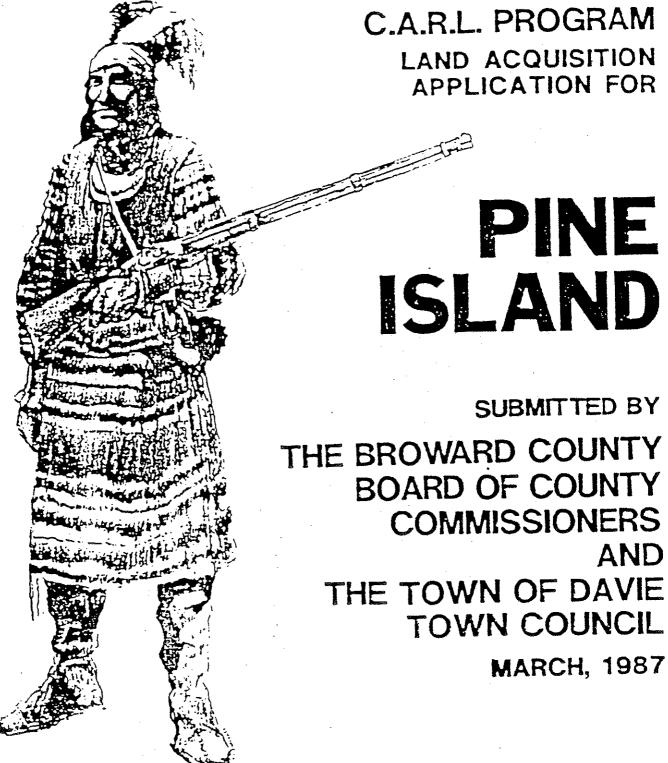
Application time frame: Submission by August 1 each year for consideration during the next fiscal year.

Each project must come before the CARL Selection Committee a minimum of three times before it may be ranked for funding. A project must obtain three votes of the Selection Committee for staff to assess the project. The project must then be readdressed at a later time by the Selection Committee and receive four votes for design work on the project to be assessed and completed. Once again at a later time, the project must receive four votes by the Selection Committee for the project for become ranked for funding approval. It must then compete on its merits with all other ranked projects. Greg Brock is the contact person at DNR for further information. (904-487-1750)

# PRESERVATION OF OPEN SPACE

Davie, florida





BROWARD COUNTY FLORIDA





### HOWARD C. FORMAN, CHAIRMAN BOARD OF COUNTY COMMISSIONERS

357-7005

May 15, 1987

TO: The C.A.R.L. Selection Committee Members

broward County and the Town of Davie are working together to acquire an environmentally sensitive area known as Pine Island. On November 5, 1986, the Town of Davie passed a resolution authorizing this joint venture. On May 12, 1967, the Broward County Board of Commissioners approved a resolution authorizing the submission of the attached application.

Pine Island is a sandy ridge, an unusual geological feature for the area. It was identified in the 1977 Land Use Plan as a unique natural area. The designation of the area as one of environmental significance was continued in 1981 when it was included in the Conservation Element of the Comprehensive Plan as a Local Area of Farticular Concern (LAPC). This designation, which was approved by the County Commission, recognized the site svalue as a natural landform, as an area of native vegetation and as an important nabitat for wildlife.

More recently, the historical importance of the Ridge as an area of habitation for Florida's early Indians has come to light. An historical survey has indicated that much of the Ridge area contains evidence of both historic and prehistoric Indian activity.

Broward County and the Town of Davie have jointly prepared this C.A.R.L. application. Some of the important features of this application include:

- 1. Local funds to acquire at least thirty percent of the site;
- 2. A management plan which addresses both the historic and environmental features of the site; and
- Local mahagement of the site by the Broward County Parks and Recreation Division.

we appreciate your consideration of this request and, if it is at all possible, we would like to have this site included among those presented to the Governor and Cabinet this July.

Sincerely,

Howard C. Forman

Chairman

HCF:DS:dah

ATTACHMENT

BROWARD COUNTY GOVERNMENTAL LENTER # 115 SOUTH ANDREWS AVENUE # FORT LAUDERDALE, FLORIDA 33301

The project survey resulted in the discovery and assessment of seven different archaeological and historic sites within section 20 of Pine Island. Two cultural resource management plans are offered here in respect to appropriate mitigation of the known and possible unknown sites located on the Pine Island ridge. Additional mitigation and public interpretation through the use of historic signs, exhibits, and historic trails is also discussed.

### Plan 1: Partial Development - Partial Preservation (fig. 12)

This plan is based on the assumption of clearing and development on some portions of the Pine Island ridge. Three management techniques are offered based on the results of the field and historic survey.

Preservation is recommended for those areas of highest known archaeological and historic significance (and in some cases botanical significance), (see number one areas in figure 12). Areas designated with a number one preservation priority include sites &Edl113, &Edl115, &Edl117, and &Edl119. In particular, site &Edl117 is one of the best preservated prehistoric village sites in eastern Broward County. The fine preservation quality of this site and its climax harmock community indicate that this area (figure 12, 1-A) of the ridge should be preserved without impact from roads or construction, and should include limited or controlled public access.

Area 1-B is Shell15, or Charlie Willie's Island, as noted on the Fries map of 1896. The large beautiful cak trees add to the general significance of this location. Interpretative signs and trails could make this a very attractive green space area.

Area 1-C represents a portion of site 85d1119 that also extends west of the section 20 line. Preservation is recommended for this narrow area of the ridge.

Area 1-D is a prehistoric site (8Bd1113) of considerable significance considering the high quantity of midden refuse. The site offers a good scientific opportunity for learning about the prehistoric adaption on Pine Island. Construction activities, clearing or development should be avoided in this area. Any necessary subsurface construction such as ditch digging or road widening should be subjected to archaeological monitoring.

Management techniques recommended for areas with a number two designation indicate that further study and testing is necessary to fully assess the significance of these areas, or that some level of archaeological excavation is necessary prior to clearing and development of that area.

Area 2-A encompasses the artifact scatter that characterizes site EEd1114. It is not clear whether these pot sherds represent refuse from habitation activities or possible association with human burials. Any planned development of this parcel should be preceded with some systematic and representative archaeological excavations under the direction of a professionally qualified archeologist.

Area 2-B is the wetlands "inlet" that is under citrus cultivation and is largely surrounded by the ridge. Its proximity to site 8Bdlll4, and its retention of wet organic peaty soil means that this area could contain well preserved artifacts. Some testing should be conducted there prior to any clearing or fill activities.

Area 2-C encompasses a low island with a small prehistoric camp or habitation site 8Bdlll8. Some archeological excavation units should be conducted there prior to any clearing or development.

Area 2-D has a moderate sized prehistoric site, 8Edl116. Although intensive disturbances have affected parts of this site, representative excavation units should be conducted there coupled with adequate monitoring to mitigate any additional loss there from clearing and development.

Area 2-E, just east of 1-A, is recommended for further study for consideration for preservation based on two reasons. First it would help provide a needed buffer to area 1-A, and second, it contains the highest known natural elevation in southeastern Florida, a sandy hill with a 29 foot elevation. Difficult terrain and thick understory made our field testing of this feature limited at best, but its potential archaeological significance is farily high considering that similar natural sandy hills offered the perfect opportunity for use as a burial mound (ie. 8Da45 in Dade County) or as a temple mound. Such human burials could be fairly deep and are out of range of a

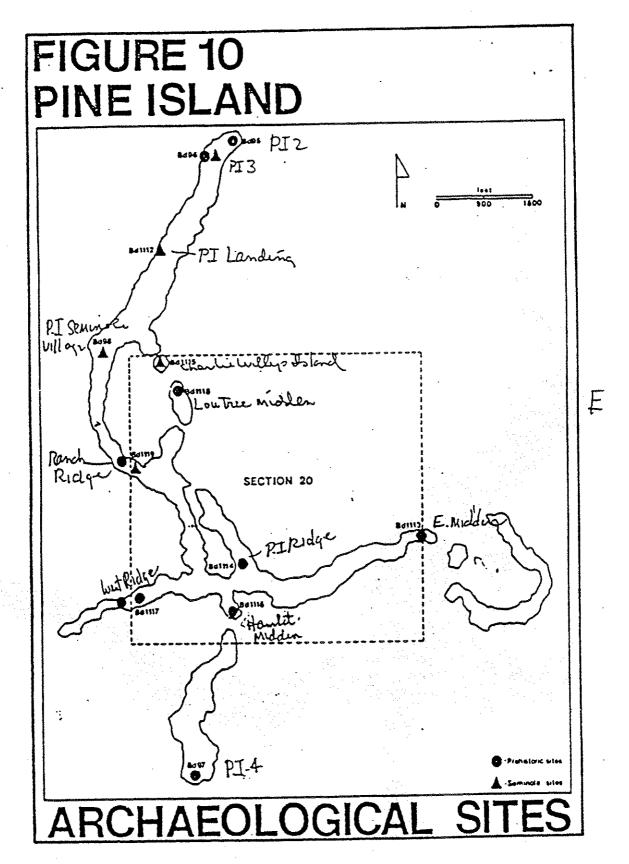
post-hole or auger survey. However, some portions of Area 2-E could be impacted with trails, some clearing (with adequate archeological monitoring), and passive recreational development.



Area three management units encompass the remaining areas of Pine Island. Although no archaeological or historic materials were located there during this survey, the potential loss of unknown sites or artifacts within these areas is still a risk, and mitigation there should be an ongoing archaeological monitoring program that includes an archaeologist working closely with clearing and development activities. The focus of this monitoring program should be to observe, record, and collect significant artifactual materials and features that might be uncovered during construction activities.

# Plan 2: Comprehensive Preservation

A comprehensive preservation plan would focus on preserving the entire ridge as green space subdivided with preservation and recreational-use areas. Building and construction would be dispersed throughout the cultivated grove area, and the ridge would exist as a kind of central park and preserve with walking bicycle trails through much of it. and Obviously, the incorporation of Pine Island ridge as a central natural and historic park would have a tremendous draw for potential customers of any proposed development there. The loss of acreage from development, however, should be offset with either public acquisition, the transfer of development rights, or incentives offered by various historic easement programs.



M

S

# FIGURE 12 PINE ISLAND Section 20,T.50 S.,R.41E.I





ARCHAEOLOGICAL MANAGEMENT PLAN1



SPRINC 1982

Vacutions On Horsepuck Ruthie Waltenspiel

# Start a Prairie Fire Of Action!



By Cuyton Clark

A praire tire of local action" will test Attence's growing need for quality outdoor recreation muniters, products Tennesse Gov. Lamor Alexander, Chairman the President's Commission on Amenicans Outdoors

To fan those Hames, the President's Commusion has recommended that \$1 hillion his allocated each year for development of a harron-wate network of greenways, parks and other recreation areas. Calling for local and state groups to take had roles sa recreation resource protection. the Commession urged the tederal government to databute those mones through its Land and Water Conservation Fund

The recommendation of the 15-member bi-partisan Communion has been praised as a turning point

the nation's recteation pures The Commission's study stay placed continuous network of kiernways third responsibility for the creation of the greenways on state and local tourism groups, chambers of

to protect open space, wildlife and plants and to protect recreation opportunition for Americans in cities

"The Commission recommended that state and regional partnership create a Coast-to-Coast network of greenways".....Executive Director Victor Ashe

commerce and governments

The pournish value of these greenways, concluded the Commission, a well worth the savestment. They would not only provide all Americans with access to open spaces and wildlands close to home, but would increase the tole of private enterprise and tical government and volunters group in recreation and conservation

According to Comm Executive Director Victor Ashe The commusion recommended that state

and suburban communities Ashr said the Commusion

gathered its facts and needs its conclusions based upon 20 hears communonen lound a p need for national leadership, and a limited, but strong tole for the federal government to play especially in providing stable longterm tunding assistance

HTF Executive Director George Cardinet who presented a report or gireneasy to the Commission applicated their tentions and a to the American Trails betweek to play a trucial role in its implementation The American Trails Network was convened by Massachusetts Institute of Technology Engineer Frank Davidson and halls to Trails Conservancy President Llaved burnell for the purpose or developing a transAmerican trail

The idea of applying a multidisciplinary approach to the extrapriousment or such a trials continued on pg. 2

### Start a "Prairie Fire Of Action"!

enthusiastic support of Cardinet and HTF "These provide are neiting to trong a whole new element into the recreational trails picture by combining the pest interests of propale enterprise with resource Conservation

Creenways areas, envisioned by the American Trads Network would allow such reconology as subsurface transmusion tines ttelecommunications gas electricity and water) to easily side by side with recreational uses

As stated in the Con teport. These precionals would reach out trom communicies all across America to line cities fowns tarms tanches pains return deserts alone wellands and forests title a wast and warres network of open spaces for recrusion and conservation Many of the pieces of the tectmonic are actually there lines floudways Heritage Corridors, wetlands and the game migratius rustes. List total to mosthem up

### HERITAGE TRAILS FUND

1350 - Julio Rink Rind Walnut Creek CA 94598

# PACE

FROM PAGE 14

"It's forward thinking I wish them luck." says Boulder Open Space Director Jim Crain.
Thus far the city has provided

Thus far the city has acquired so 16,100 ucres of open space for \$48 to million, Buolder plans to spend an other \$32 million for 4,700 more govers. Crain says

The 228 square mile city 31-ready has accumulated more open space acreage than the total acreage (14592) within its city limits. Most is in the 31-square mile heather Valley in which heather ties to time 51-bits incres in the valley, 31 percent are preserved as open space.

Fig. 16.40. Who has a sisted South Fig. 16.40 says repensy as a Kineded to protect the areas resources and to protect the appealing for residents.

"Land is like a runch. A runch has a certain carrying capacity for unimals Land has a certain capacity for people." he says. "You're working on an ecological disaster in South Florida."

Houseter residents petitioned their city council for a referendum on the open space program and a four-tenths of a cent sales tax to

finance it. The tax generates \$4.5 million every year. Chies in Colorado, unlike in Florida, can impose their own safes takes.

Osing its revenue, the city has purchased greent-elis on its northern, eastern, western and southern sides. Some of the property is leased to farmers and ranches

Open space prevents cities from growing into one another. Crain says, as well as providing natural scenery

Open space kinds are open to the public for fishing, firthing, picnicking possessing, bird watching and other activities at the cost

"I verybody leves it." he says trant says hand has sold for 1400 an acre to \$100,000 an acre to \$100,000 and transfer in \$100 and transfer in \$100 and the says that the says the says that the says the says the says that the says the say

tand in Broward world be expensive to acquire, says Abramar values and tan DeSants

Two thousants acres would cost 550 million in bhramar," he says. But he is still intrigued.

"If they can do it, certainly, I'd like to sit down with them and see if it is a way to go." DeSants says. "If I lived in Davie, I'd be for it. If preserves what people move into these areas for."

during open space could be spread out over many years using several

The city could buy development rights to farms and orange groves, allowing them to be used for agriculture but not development Development rights could be transferred from one tract to another

Government grants could be acquired and money could be obtained from impact fees charged to developers for recreational facilities such as parks, Rosenbaum says Land in Davie sells for about \$18,000 an acre. Rosenbaum says

His long range goal is to set uside open space within a 12-square mile area of western and central Davie Rosenbaum says the area, nearly a first of time 40-square-mile town would be reserved for tow density uses: such as single-family homes on one acre, parks and agriculture. Within farce to five years, Rosenbaum hopes to integrate 4,000 to 2,000 acres into a hetwork of parks, traits, and roadside landscuping. "It's an old-fushtoned concept

"It's an old-fushioned concept where cities set aside large fracts for parks, not the rotten piece the developer couldn't self-between the school and the sewer plant," he says

says

Jefferson County, Colo, Open
Space Director Ray Printz says his
program has had fremendous sup-

port from the public after it begon in 1972. The county of 400,000, south of Boulder, imposed a half-cent sales tax, which generated the sales tax, which bearers been used to acquire 16,500 arres to the county borne troublete of

The county keeps two-thirds of the lax for its open space and dibby vides the remainder among its 11 to cities As in Boulder, the open space its program was initiated by lefferson is. County residents who feared out growth would turn their area into wall-to-wall-suburbia," Printzsays

"None of the other were for it. The county commission had in be pursuaded the place it on the ballot, he says

The Dayle open space idea gerimmated about 10 years ago when Town Councilman Bud Jenkins began fooking at developing a trail s) true the their harded about open space projects elsewhere in the county.

"You can only buy it once. This is a Rolden opportunity to develop a high-quality community." he says "The property value of everybody will go nowhere but up."

Broward County Commissioner Howard Forman says the county and Broward's cities have preserved some open space, such as west take in Hollywood, Markham

let it began Park in Sunrise, Tree Tops Park in de 400,000, Davie, and CB Smith Park in Pernsed a half-broke Fines. He likes the Idea of generated setting aside fracts of land to leave which has them as they are.

5.500 acres "There is always a need for a

place that you got away to as a boy."
Forman says

Comparing Broward to counties in Calorado is like comparing apples and oranges to Broward Commissioner Nicki Grussman

"We're not buying vistas here. We're buying peace and quiet. Open space is a reminder of the past, somiething to refresh your memory, not something the eye can see, but something the soul can appreciate," she says

Grossman says Hollywood resident: approved a \$7.5 million band assure in November 1980 to buy the Holly wood Golf Course and Country Club and preserve II as a golf course after a developer proposed building highrises on the links

"The cultens in Florida have ner been doing it for some time. We

Our Rivers programs," she say

Branca says Miramar is consecuting preserving an oak haman an near its southern border "We'd! to keep it in its natural state" says

Pembroke Pines officials haverloper of Chapel Trail to Jacres 200 acres at the north corner of the proposed resident and industrial development is used in the preserve will be development of the city to buffer Chapel Toffin a proposed Broward land project wellands. In addition 45,000-square-foot tract will be preserved where finding artifacts in served where finding artifacts are served where finding are served where finding are served where finding are served are serv

"Open space sounds great on t surface," says Pembroke Pu Mayor Charles Flanagan. "Ho great idea providing the people I ing here are willing to pick up t tab. All these things have a si dancy to cost money."

### age the Town of Davie is desperalely trying to Jenkins lits the country insouthern drawl, Bud hve gallon hal and a soft With boots, blue jeans, a

spaces of horses and wide open in the county-he is a lover Arena- the only such shows monthly rodeos at the Davie Star Rodeo, which offers up As promotions man for 5

green land into copdos developers furning lush the town eaten up by He doesn't want to see

# "Once it's [the land] developed, it can't be bought." Jenkins said "You can only buy it once

by a sea of cement in the county." dasis of green surrounded "I want Davie to be an

Council agree. Rosenbaum and the Town Town Administrator Irv

Open Space program the goal is to accumulate 1,000 to do just that Called the Jenkins unvieled a proposal conference Rosenbaum and Last week during a press

> space, mostly orange groves, forests, pine ridges and other undeveloped areas to 2,000 acres of open and preserve it

lown," Rosenbaum said horse trails inroughout the several years ago when Bud was interested in having The idea came up

gave Rosenbaum the green vation of open space light to proceed with preser-Open Space proposal and Wednesday night liked the Town councilmembers

There are two parts to the

Bud's Goal: Make Davie 'Oasis

of the town And the cost to need to develop every corner high quality community, ing area , and develop a funity to preserve a develop Hosenbaum said. "We don't "This is a golden oppor-

The state of the last

proposal "Roadscape" and "Parkscape"

course, horse traits lakes, bicycle paths, and of complete with gazebos a series of passive parks roads and other open spaces "Parkscape" which will be planting trees along the "Roadscape" proposes

Orange Drive Street and north along Road, south of Southwest 14 affected is a region east of ed for the program. The land 1.75, west of Pine Island

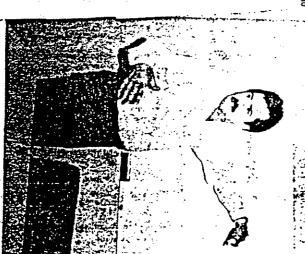
(lown) taxpayers would be almost negligible "

Rosenbaum said the towr

portion of Davie is earmark. The central and western

> western and central areas costs of the lower deasity lion of the lown to cover the eastern and nothern porcommercial development in has enough industrial and

cost or a limelable. Rosen going one, without a folal The project will be an on



uninistrator Jryt Aosonbaum — scusses "Roadscape" and "Parkscap SHOWING THE CONCEPT COAVIOROWITH ..

## American Greenways

HTF Executive Director, George Cardinet, was one of three members of the President's Commission, Management and Conservation Team, who submitted papers from which the Greenways proposal was distilled. Cardinet's paper follows:

Greenline parks, beltways and senic countrysides are a concept literally as old as the hills.

Psalms 121-1 'I will lift up mine eyes to the hills from whence cometh my help."

Man since the advent of history has been searching for new horizons, new dimensions externally and internally, concepts and mediums that foster, satisfy and fulfill this primal or instinctive urge.

The grid of development while fundamental to order introduces an element contrary to the searching nature of man.

The Army Corps, tampering with nature, straightened out the beautiful meandering Kissimee River in Florida excessively draining the contiguous wetlands. This dried up land and ground water, delivering the latter in a flood downstream. They are now engaged in restoring the river to its natural course and function. This analogy proves the efficacy of expediting traffic by freeways.

However greenbelts, parkways, trails and scenic countrysides relieve the unnatural "grid" of the urban scene. Man, the creator and habitant of the scene, to escape from the perversion of his nature must literally lift up his eyes to the hills...greenbelts.

Just as we require "freeways" to expedite traffic, we require greenbelts, parks and open space to expedite the preservation of the nature of Man.

The question is asked "How important is the greenbelt idea?" I would respond, "How important is the preservation of the nature of Man?" Is it not prudent and in the national interest for man to reside in the tranquility of his nature through the medium of greenbelts?

Trails, paths and bicycle ways are the normal component of greenbelts.

It is and should be axiomatic
"that trails begin where the people live." The old concept was for parks and open space implementation is the dedication ordinance.

The park dedication ordinance.

Greenline parks and beltways can be dual purpose and contain within them a traffic element. Traffic is expedited as well as recreation and acquisition administration and maintainance costs minimized.

Greenbelts such as the Forest Preserves around Chicago have proven a social, recreational and economic boon. Contiguous property values are enhanced.

The East Bay area of California now comprising over 40 parks governed by a master plan which projects their linking by trails which are in themselves linear parks serves as an example of breaking up development with greenbelts. The administrative agencies are brought in intimate contact with the neighborhoods a situation not common under other concepts.

The barriers to fuller realization from implementation of greenbelt, open space, park and trail concepts besides the perverseness of some is the lack of communication, information, creativeness, initiative and adequate administrative tools. The latter include a general plan with recreational element and a park dedication ordinance.

The general plan sets forth the broad concepts of area development and the infrastructure it will require. Thus when development

comes along it is required to accomodate the planned infrastructure which should include parks and open space. The key to implementation is the Park dedication ordinance.

The park dedication ordinance, recognizing the implicit recreational needs of a community, prescribes a formula requiring development to contribute cash or land in lieu of a contribution to realize said recreational needs. This ordinance concept has been sustained by the United States Supreme Court.

Developed communities that havneglected or belatedly recognized the imperative of these concepts to the tranquility of man require to have an opportunity, in part, to recover. Remnants of old canal systems which abound in the east and former agricultural lands, abandoned rail-road right of ways and utility corridors all are potentials. Redevelopment should conform to a general plan which includes park and open space elements. With these elements in the general plan a community can eventually be made over. Time, rather than immediacy should be the motivation. Time, patience and vision can insure realization. All of us in our lifetime have seen the razing of the old and building of the new. Unfortunatly in most cases shortsightedness has not foreseen the potential.

Yes, we need regional and national landscape conservation strategies. They need not be compulsory. But with communication, education and wisdom of concept the nature of man will ultimately make them compelling.

Our help cometh from the hills



JRDAY**FOCUS** 

## Western cities: look at preserving room to roam

By Bob French Sun-Tattler staff

Davie's vision of preserving tracts of its farmland, orange groves, pine ridges and other areas as open. space, a new idea to Broward, is intriguing officials. But, it has cost money. The state of with the lates in Pembroke Pines and Miramar whose cities are facing a growth explosion.

"I think it's unique," says Pembroke Pines Commissioner Ira Corliss. "I'd like to see how that will function. It might be an excellent example of pre-

serving the environment and the amenities so many; of us moved west forth a reclassifier can a paragraphic

But they're not sure about the cost of acquiringterritory for open space, an expense Davie Administrator Irv Rosenbaum says can be managed withouta large tax increase.

Open space would go beyond obtaining land for parks and recreation, as cities do now from developers, to preserving tracts as they now are, he says...

"It's fantastic, Who died and left him money?" says Miramar Mayor Brank Branca. "L's wonderful. If he comes up with something that makes sense, I'd copy him. It would probably be the greatest thing to · 食用(性) A(1) happen to South Florida. 1994 1 :: The idea isn't new to other parts of the country:

Boulder, Colq., a town of 80,000 nestled against:

the Front Range of the Rocky Mountains, embarked on an open space program in 1967.

please see SPACE.

# Davie plan to control growth due

# Goal is to preserve town's natural beauty

By KIMBERLY LIFTON

DAVIE — Town officials, fearing that development will destroy the town's rural character, have devised a comprehensive plan to preserve some land in its natural state.

Town Administrator Irv Rosenbaum said he will unveil a program on Wednesday to preserve between 1,000 to 2,000 acres of natural land in a 12-square-mile area west of Southwest 100th Avenue.

Orange groves, pastures and horse trails are scattered throughout the western fringes of this 42-square-mile town. And officials said the program is needed to prevent the natural beauty of the agricultural land from becoming a thing of the past when developers set sights on it.

"If we don't preserve it, we will regret it," said council member Frank Cannata. "People move here to establish a certain lifestyle. We have to give it to them."

Added Rosenbaum, "The big danger out here is overdevelopment."

His goal is to provide better planning and avoid anymore piecemeal development in Davie.

Town Council members, county planners and environmentalists hailed the program. But some environmentalists said such a program, thought to be the only one of its kind in the county, will not work without full dedication from the town.

"It is an admirable thought if they can pull it off," said Don Stone, a Broward County environmental planner. "It is a worthy undertaking. Everyone seems to want to do this, but it is hard to execute."

The town, which expects to have an ultimate population of 90,000, is 64 percent undeveloped. Most of that land is in the western section. The part of town east of

SEE DAVIE /58

DAVIE FROM PAGE 18

### Davie plan to control growth due

Southwest

100th Avenue is nearly developed.

Twelve of the remaining 30 square miles in the county that are zoned agricultural are in Davie, county planners say.

"Davie still has ample open land and time to plan," Rosenbaum said, "We must act now to soften the impact of Interstate 595 and increasing development pressures in town."

Mayor Joan Kovac said the program would be hard to achieve because of the big movement toward development, but would be well worth it.

"This would give us a tool to overcome the hard battle of the Officials want to keep Davie's natural beauty that includes orange groves, pastures and horse trails.

push for development," Kovac said.

Rosenbaum's plan calls for the town to acquire land in a target area and legally stop development there. He said the town could buy the rights to develop property, issue bonds to finance development and charge impact fees to developers.

Rosenbaum, who said he will ask the Town Council on Wednesday if staff can begin implementing the program, said he hopes the program will be under way next month.



# Davie adopts plan to save open land

By Bup French / 4/87

DAVIE — To preserve its country atmosphere amid the crush of development in Broward, town officials are embarking on a plan to set aside tracts of open space in a 12-square-mile area.

The plan is the first of its kind in South I-torida, said Town Administrator Irving Rosenbaum. Town council members Wednesday approved adding the concept to the city's comprehensive plan.

"We don't need to develop every corner of town," he said.

While he doesn't have a total cost or a timetable for the project, Rosenbaum said the effect on the town's taxpayers would "be almost negligible."

"The cost will be spread out over many years," he said.

His initial goal is to integrate 1,000 to 2,000 acres of mostly undeveloped territory, such as citrus groves, forests, pine ridges, into a network of parks, trails and roadside landscaping throughout central and western Davie. Those acres, in a region east of 1-75, west of Pine Island Road, south of Southwest 14th Street and north of the town limit along Orange Drive and Sheridan Street, would be purchased in about three to five years, Rosenbaum said.

Acquiring open space can be accomplished in several ways, he said. The city can purchase development rights to farms and orange groves, allowing it to be used for agriculture but not for development. Development rights could be transferred from one truct to another. Money from impact fees charged to developers and from government grants could be used to purchase property.

"This is a golden opportunity to develop a high quality community," Rosenbaum said.

The open space idea originated about 10 years ago when Town Councilman Bud Jenkins began looking at developing a trail system. Jenkins then learned about open space projects in other cities around the country.

"We could be an island of green in a sea of asphalt and concrete," he said. "This thing is working throughout the U.S. Once it's gone, it's gone."

Rosenbaum said the city has enough industrial and commercial development in its eastern and northern sections, and a strong tax base to cover the costs of the town's services without developing the lower-density western and central areas. By preserving the land, the town's properly values would increase, strengthening its tax base, he said.

# Davie embraces proposal to buy land for preservation



By CHRIS MURRAY

DAVIE — Picture this: A dozen acres of wooded area connected with bicycle trails and tree-lined paths, serenity amid the chaos of multifluored buildings and connecting tighways.

That's what Town Administrator Irv Rosenbaum on Wednesday night asked residents and Town Council members to picture by 1990, when he hopes the town will own 1,000 acres of undeveloped land pre-

served under the Open Space program.

"When I thought about this about 10 years ago, I said we could be an island of green in a sea of concrete and asphalt, which is what Broward County will be by the time they get done," Council member Bud Jenkins said. "This doesn't require a lot of maintenance or a lot of financial investment."

The goal of the program is to accumulate 1,000 to 2,000 acres of open space west of Southwest 100th Avenue to preserve for its natural beauty, Rosenbaum said.

The town already has received a grant to buy the Oak Hidge parcel of the Belcher Tract west of Pine Island Road.

"By removing 12 acres [from development] we will be lowering the build-out population," Rosenbaum said. "To have a

town economically viable you don't need to develop all your land."

The Open Space proposal will connect the land, not engulf it, he said.

"This is a golden opportunity to preserve a developing area," Rosenbaum said. "You can only buy it once. Once it's developed it can't be bought."

Council members agreed and lavished praise on the town's staff members before authorizing them to proceed with preservation of open space.

Two parts of the proposal, "Parkscape," and "Roadscape," will use landscaping to preserve a serene atmosphere in the town, Rosenbaum said.

"Roadscape" calls for the development of roadside nurseries, planting trees along the streets, and other open spaces.

The Arvida Corp. has already begun a similar program in the Weston and Bonaventure areas west of Davie, Rosenbaum said.

"Roadscape" will connect "Parkscape," which will be a series of passive parks complete with lakes, bicycle and bridle paths and gazebos, he said.

The town is already working on the Visions 2000 project to enhance the quality of life in the town by the year 2000. Although the Open Space project is separate, the two will intertwine when completed.



#### RESOLUTION NO. R-87-281

A RESOLUTION OF THE TOWN OF DAVIE, FLORIDA, AUTHORIZING A STRAW BALLOT QUESTION REGARDING THE ESTABLISHMENT OF A PROGRAM FOR THE ACQUISITION AND PRESERVATION OF GREENSPACE.

whereas, the Town Council wishes to place on the ballot of the general election to be held on March 8, 1988, a straw ballot question regarding establishment of a program for the acquisition and preservation of Greenspace; and

WHEREAS, the Town Council also wishes to include natural areas such as oak ridges and wetlands, citrus groves, parks and recreational areas in this Greenspace program.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF DAVIE, FLORIDA:

 $\underline{\text{SECTION 1}}$ . That the following question be placed on the ballot of the March 8, 1988 general election as a straw ballot question:

"SHOULD THE TOWN OF DAVIE ESTABLISH A PROGRAM FOR ACQUIRING AND PRESERVING "GREENSPACE" INCLUDING NATURAL AREAS SUCH AS OAK RIDGES AND WETLANDS, CITRUS GROVES, PARKS AND RECREATIONAL AREAS?"

SECTION 2. The form of ballot for the election is attached hereto as Exhibit "A".

SECTION 3. This Resolution shall take effect immediately upon its passage and adoption.

PASSED AND ADOPTED THIS 28LL DAY OF December, 1987.

Mayor/Councy Mag

Attest:

Barbara J. Bergamini

APPROVED THIS 28th DAY OF Ocember. 1987.

### **OPEN SPACE PROGRAM**

Should the Town of Davie establish a program for acquiring and preserving "GREENSPACE" including natural areas such as oak ridges and wetlands, citrus groves, parks and recreational areas.

NO

WE HEREBY CERTIFY THE R MARCH 8, 1988.	ESULTS FOR THE TO	OWN OF DAVIE GENERAL ELECTION, -
TOTAL BALLOTS CAST		5755
COUNCILMAN - DISTRICT 1	-	
KATHRYN "KATHY" COX	2507	VOTES
BETTY B. ROBERTS	1906	VOTES
COUNCILMAN-AT-LARGE		
FRANK J. CANNATA	3843	VOTES
R. WARREN MEDDOFF	1284	VOTES
OPEN SPACE PROGRAM		
Should the Town of Davi and preserving "GREENSP oak ridges and wetlands areas?	'ACB" including na	tural areas such as
YES.	5137	VOTES
No	308	VOTES
DAVIE CHARTER AMMENDMEN	<u>T</u> .	
Should Section 11 (A) o changes to the geograph districts from which co with Ordinance No. 88-6 the exact description o the proposed ammendment	ical boundaries o uncil members are of the Town of D f said boundaries	e elected in accordance davie which contains
YES	3760	VOTES
NO	1266	VOTES
the second secon	New William Control of the Control o	And the state of t
	•	•
	BR	OWARD COUNTY CANVASSING BOARD
	<u>CH</u>	AIRMAN Ohe
		Dan Colum
	SU	PERVISOR OF ELECTIONS
		/ 11

COUNTY COMMISSIONER

# MPLE BALLOT

OFFICIAL BALLOT - GENERAL ELECTION
TOWN OF DAVIE MARCH 8, 1988

# SAMPLE BALLOI

OFFICIAL BALLOT - GENERAL ELECTION
TOWN OF DAVIE MARCH 8, 1988

	P WARDEN HERRORE	רסטווכוניונאו
<b>1</b> 86	BETTY B. ROBERTS	VOTE FOR OHE
97 🗸	KATHRYN "KATHY" COX	COUNCILNIAN

The second second	COURCILMAN F	m	DISTRICT
R WARREN MEDDOFF	FRANK J. CANNATA	BETTY B. ROBERTS	KATHRYN "KATHY" COX
	100 L	98	97 1

# OPEN SPACE PROGRAM

groves, parks and recreational areas? Should the Town of Davie establish a program for acquiring and preserving "GREENSPACE" including natural areas such as oak ridges and wellands, citrus

# OPEN SPACE PROGRAM

Should the Town of Davie establish a program for acquiring and preserving "GREENSPACE" including natural areas such as oak ridges and wellands, citrus groves, parks and recreational areas!

NO	YES
106 🕹	105

NO	YES
106	105
Ţ	1

# DAVIE CHARTER AMENDMENT

which contains the exact description of said boundaries both before and after the members are elected in accordance with Ordinance No. 88-6 of the Town of Davie proposed amendment? Should Section 11(A) of the Davie Charter be amended to provide changes to the

# DAVIE CHARTER AMENDMENT

geographical boundaries of the four (4) council districts from which council members are elected in accordance with Ordinance No. 88-6 of the Town of Davie which contains the exact description of said boundaries both before and after the proposed amendment? Should Section 11(A) of the Davie Charter be amended to provide changes to the

NO	YES
11	11
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ON	YES
113	jugas jugas
₩ ↓	<b>↓</b>

#### RESOLUTION NO. R- 88-225

A RESOLUTION OF THE TOWN OF DAVIE, FLORIDA, CREATING AN OPEN SPACE ADVISORY COMMITTEE IN THE TOWN.

WHEREAS. The Town of Davie has an Open Space program which provides for the preservation of green areas, and

WHEREAS, public participation is important in the planning process for the open space plan, and

WHEREAS, it is in the best interest of the Town of Davie to form a committee to provide public input to the Town's Consultant Planning Team.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF DAVIE, FLORIDA:

SECTION I. There is hereby created an Open Space Advisory Committee composed of ten (10) members. Each councilmember shall appoint two (2) members to said committee.

SECTION 2. The Open Space Advisory Committee members shall be appointed for a one year period, and shall provide input to the Town's Consultant Planning Team.

SECTION 3. This resolution shall take effect immediately upon its passage and adoption.

PASSED AND ADOPTED THIS 720 DAY OF SEPTEMBER, 1988.

MAYOR/COUNCILMAN

TOWN CLERK

APPROVED THIS THE DAY OF SEPTEMBER, 1988.

A RESOLUTION OF THE TOWN OF DAVIE, FLORIDA, CALLING FOR A REFERENDUM REGARDING THE ISSUANCE OF GENERAL OBLIGATION BONDS BY THE TOWN OF DAVIE IN AN AMOUNT NOT TO EXCEED TEN MILLION DOLLARS FOR THE PURPOSE OF ACQUIRING, IMPROVING AND PRESERVING UNDEVELOPED REAL PROPERTY FOR THE TOWN'S OPEN SPACE PROGRAM, PROVIDING FOR PUBLICATION OF NOTICE OF SAID REFERENDUM; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Town Council of the Town of Davie, Florida, wishes to acquire certain undeveloped real property located within the boundaries of the Town in order to create a program of open space for preservation as passive recreational areas and to construct bike paths, horse trails and hiking trails, provide for roadside landscaping and take other action necessary in connection therewith (the "Open Space Program"); and

WHEREAS, the Town Council wishes to seek approval of the electors for the issuance of general obligation bonds in an amount not to exceed \$10,000,000 for the purpose of acquiring, improving and preserving undeveloped real property for the Open Space Program; and

WHEREAS, the Constitution of the State of Florida, Article VII, Section 12, as well as Florida Statute 100.211 and the Town of Davie Charter, Section 12 (T), authorize and require a voter referendum for the approval of the issuance of general obligation bonds by the municipality.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF DAVIE, FLORIDA:

SECTION 1. Subject to a referendum provided for herein and pursuant to subsequent proceedings of the Town, the Town will issue general obligation bonds in an aggregate principal amount not exceeding TEN MILLION DOLLARS (\$10,000,000), issuable in one or more series, maturing at such time or times not exceeding thirty (30) years from their date or dates of issuance and bearing interest at a rate or rates not exceeding the legal maximum rate of interest, in each case as shall be determined by resolution of the Town prior to the time of sale thereof ("Bonds"). Such Bonds shall pledge the full faith and credit of the Town and be payable from ad valorem taxes levied by the Town without limit as to rate or amount on all taxable property within the Town. The Bonds will be issued to provide funds which, together with other available funds, will enable the Town to acquire, improve and preserve undeveloped real property for the Open Space Program (the "Project").

SECTION 2. That the Town Council does hereby call a bond referendum pursuant to Article VII, Section 12 of the Constitution of the State of Florida, Florida Statute 100.211 and Section 12 (T) of the Charter of the Town of Davie, to be held in conjunction with the general election on March 14, 1989 for the purpose of determining whether the qualified electors of the Town approve the issuance of the Bonds to finance, together with other available funds, the cost to the Town of the Project.

Said Referendum shall be held at the same polling places in the several precincts, respectively, in the town as the polling places for the general election to be held on the same day. The inspectors and clerks who shall conduct said Referendum ("Election Officials") shall be the same as those selected and appointed for the general election. The polling places for the Referendum shall be open from 7:00 a.m. to 7:00 p.m. on the same day. In ac-

cordance with the Constitution and the laws of the State of Florida, all qualified electors of the Town shall be entitled and permitted to vote in the Referendum.

SECTION 3. That the following bond referendum question be placed on the ballot of the March 14, 1989, general election:

"Shall the Town of Davie issue general obligation bonds not exceeding \$10,000,000, issuable in one or more series, maturing not later than 30 years from their issuance dates, bearing interest not exceeding the maximum allowable by law, payable from ad valorem taxes levied by the Town, to acquire open space lands within the boundaries of the Town and to construct trails, provide for landscaping and take other actions necessary in connection therewith?"

SECTION 4. The form of ballot for the election is attached hereto as Exhibit "A".

SECTION 5. The Town Clerk is hereby authorized and directed to deliver copies of the Ballot set forth herein to the Supervisor of Elections of Broward County ("Supervisor") for printing; to ascertain that the wording of the Ballot is correctly printed thereon; and to ensure that any reprinting, if necessary, is ordered by the Supervisor, all within such time as is necessary to allow compliance with any mailing requirements imposed by law in connection with absentee ballots.

SECTION 6. Absence ballots containing the questions set forth in Section 3 above shall be prepared for the use of absent, qualified electors entitled to cast such ballots in the Referendum in accordance with Chapter 101, Florida Statutes.

SECTION 7. The referendum shall be held and conducted in the manner prescribed by law for holding general elections in the Town. The Election Officials at each polling place in the several precincts, respectively, shall prepare and file returns of such Referendum and deliver the same to the Broward County Canvassing Board for canvassing in the manner provided by applicable law. Said returns shall be certified to the Town Council of the Town ("Council"), which shall declare the results thereof and record the same in its minutes along with the number of qualified electors of the Town who voted at the Referendum on each question proposed and the number of votes cast for and against approval of the Ballot question. The Council shall certify the results of said Referendum to the Florida Department of State in the manner provided by applicable law.

SECTION 8. If a majority of the votes cast by qualified electors of the Town at the Referendum approve the Ballot question concerning the Project, the Town shall be authorized to issue the Bonds in the manner provided herein. The bonds may be issued all at one time or in part from time to time as the Town may in its discretion hereafter determine by subsequent resolution.

SECTION 9. The Supervisor is hereby authorized and requested to make up and certify a list of the names of all qualified electors residing in the Town. A certified copy of such list shall be furnished to the Town Clerk and filed among the records of the Council.

SECTION 10. The Town Clerk shall prepare a notice of the Referendum in the manner required by law and cause a copy of this Resolution to be published in full, as part of the Notice of Referendum, together with an appropriate caption in such form as the Town Clerk shall determine in the Sun Sentinel/Fort Lauderdale News, a newspaper of general circulation in the Town, once in the fifth and third weeks prior to the week in which the Referendum is to be held, the first publication to be not less than 30 days prior to the date of such Referendum. The Town

Clerk shall secure from the publisher of said newspaper an appropriate affidavit of proof that this Resolution has been duly published, and said affidavit shall be made a part of the record of the Council.

SECTION 11. In the event that any word, phrase, clause, sentence or paragraph hereof shall be held invalid by any court of competent jurisdiction, such holdings shall not affect any court of competent jurisdiction, such holdings shall not affect any other word, clause, phrase, sentence or paragraph hereof.

SECTION 12. This Resolution shall take effect immediately upon its passage and adoption.

PASSED AND ADOPTED THIS 26TH DAY OF JANUARY, 1989.

/ Mayor/Councilman

Attest

Barlara Bargamine 155 M Town Clerk

APPROVED THIS 264 DAY OF January, 1989

#### EXHIBIT "A"

### BOND REFERENDUM TO ACQUIRE OPEN SPACE LAND FOR THE TOWN OF DAVIE

Shall the Town of Davie issue general obligation bonds not exceeding \$10,000,000, issuable in one or more series, maturing not later than 30 years from their issuance dates, bearing interest not exceeding the maximum allowable by law, payable from ad valorem taxes levied by the Town, to acquire open space lands within the boundaries of the Town and to construct trails, provide for landscaping and take other actions necessary in connection therewith?

FOR BONDS
AGAINST BONDS

### TOWN OF DAVIE GENERAL ELECTION MARCH 14, 1989

WE HEREBY CERTIFY THE RESULTS OF THE GENERAL ELECTION FOR THE TOWN OF DAVIE, MARCH 14, 1989:

COUNCILMAN DISTRICT 2		
(vote for one)	4 170	•
TOTAL BALLOTS CAST	4,179	VOTES
M. ARTHUR (ART) LAZEAR	1,509	VOTES
FRANKE McGOVERN	88	VOTES
EARL MORRALL	1,970	VOTES
AL TYLER		VOTES
·		
·	<b>₫</b> 	
COUNCILMAN DISTRICT 3		
(vote for one)		
TOTAL BALLOTS CAST	4,182	VOTES
JOAN KOVAC	2,509	VOTES
SCOTT PLANTE	356	VOTES
GEORGE R. PROCHASKA	1,039	VOTES
ID (IOHN) SCISM	278	

### BOND REFERENDUM TO ACQUIRE OPEN SPACE LAND FOR THE TOWN OF DAVIE

Shall the Town of Davie issue General Obligation Bonds not exceeding \$10,000,000, issuable in one or more series, maturing not later than 30 years from their issuance dates, bearing interest not exceeding the maximum allowable by law, payable from ad valorem taxes levied by the town, to acquire open space lands within the boundaries of the town and to construct trails, provide for landscaping and take other actions necessary in connection therewith?

TOTAL BALLOTS CAST	3,774	VOTES
FOR BONDS	3,007	VOTES
· .		
AGAINST BONDS	767	VOTES

BROWARD COUNTY CANVASSING BOARD

COUNTY JUDGE

SUPERVISOR OF ELECTIONS

COUNTY COMMISSIONER

### APPENDIX IV-5 - Recreation Sites Used for Level of Service Determination

<u>Facility</u>	Acreage (+)	Service Level
A.D. Griffin Park	20.0	Community
Arrowhead G. C.	30.0	Community
Berman Park	3.0	Neighborhood
C-11 Canal Bank	36.0	Community
Flamingo Elementary	5.9	Community
Hawkes' Bluff	12.5	Community
Ivanhoe Park	3.3	Neighborhood
Ivanhoe Linear Park	25.0	Community
Lange Park	5.3	Neighborhood
Lyn Mar Park	5.0	Neighborhood
Nova Middle/High	14.0	Community
Oak Hill Equestrian Park	10.0	Community
Orange Park	0.5	Neighborhood
Phase 1 Open Space	110.0	Community
Pine Island Park	38.0	Community
Potter Park	3.7	Neighborhood
Rodeo Arena	10.0	Community
Rolling Hills G.C.	35.1	Community
Shenandoah Park	17.0	Community
SW 36th Court Park	.2	Neighborhood
39th Street Ballfields	4.5	Community
Tree Tops	10.0	Regional
Veterans' Park	15.0	Community
Waterford Park	5.0	Neighborhood
Western High	20.0	Community
Total Acreage	439.0	•

Source: Town of Davie

APPENDIX IV-5

### BOND REFERENDUM TO ACQUIRE OPEN SPACE LAND FOR THE TOWN OF DAVIE

Shall the Town of Davie issue General Obligation Bonds not exceeding \$10,000,000-issuable in one or more series, maturing not later than 30 years from their issuance dates, bearing interest not exceeding the maximum allowable by law, payable from ad valorem taxes levied by the town, to acquire open space lands within the boundaries of the town and to construct trails, provide for landscaping and take other actions necessary in connection therewith?

TOTAL BALLOTS CAST	3,774	VOTES
FOR BONDS	3,007	VOTES
AGAINST BONDS	767	VOTES

BROWARD COUNTY CANVASSING BOARD

COUNTY JUDGE

SUPERVISOR OF ELECTIONS

COUNTY COMMISSIONER

### APPENDIX IV-5 - Recreation and Open Space Sites Used for Level of Service Determination

<b>Facility</b>	Acreage (+)	Service Level
معاود مسلمه بالاستواد والاستواد والمعارفين فالموادي فالمساوات والمساوية المساوية والمساورة والمساورة		مالا يما والمنطقان والمالي المالي والمالي والمالي والمالي والمالي والمالي والمالي والمالي والمالي والمالي والم
Arrowhead G. C.	30.00	Community
Bergeron	3.2	Neighborhood
Berman Park	3.0	Neighborhood
C-11 Canal Bank	36.00	Community
Davie Elementary	5.9	Community
Flamingo Elementary	5.9	Community
Flamingo ESL	155.00	Regional
Hawkes' Bluff	12.50	Community
Ivanhoe Park	3.3	Neighborhood
Ivanhoe Linear Park	25.00	Community
Lange Park	5.3	Neighborhood
Driftwood	0.8	Neighborhood
Oak Hill Equestrian Park	10.0	Community
Orange Park	0.5	Neighborhood
Pine Island Park	38.00	Community
Pine Island Ridge ESL	101.00	Regional
Potter Park	3.7	Neighborhood
Reflections	4.5	Neighborhood
Robbins Lodge	160.00	Community
Rodeo Arena	10.00	Community
Rolling Hills G.C.	35.10	Community
Shenandoah Park	17.00	Community
SW 36th Court Park	0.2	Neighborhood
39th Street Ballfields	4.5	Community
Tree Tops	257.00	Regional
Veterans' Park	15.00	Community
Waterford Park	5.0	Neighborhood
Waverly 100 •	10.00	Neighborhood
Western High	20.00	Community
Westridge	46.00	Community
Wolf Lake	50.00	Community
Total Acreage	1073.4	,
Source: Town of Davie		